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FRANK: G. RUFFIN, EDITOR.



DEVOTED TO ,

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AND THE

HOUSEHOLD ARTS.

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THE SOUTHERN PLANTER

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IMPORTED HAVELOCK.

HAVELOCK, four years old this Spring, is a dark mahogany bay, with black legs, without a white hair, of great muscular power, symmetry of form and superior action. He was got by Imported Scriverington, his dam by Retrieva, g. dam by Grand Turk, g. g. dam and g. g. dam all Cleveland bay mares.

For pedigree of Scriverington, see advertisement of Mr. R. H. Dulaney of Loudoun.

HAVELOCK will be let to a limited number of mares at my residence, at \$40 the season, which can be discharged by the payment of \$30 before the 1st day of July. Insurance \$50. Grooin fee 50 cents. The season commences the 1st of March and expires the 15th of July. Mares, however, put by the season, if not with foal, can be put any time during the year by the payment of an additional sum of \$10.

Mares kept at the usual rates.

JOHN R. WOODS,

Near Ivy Depot, Albemarle Co., Va.

P. S.—In consequence of Havelock's being thrown back so much from his voyage over, I cannot allow him to serve but a very small number of mares. I have, however, instructed Mr. Thomas Betts, to procure for me "NAPIER," the best Cleveland bay stallion—the winner of fifteen prizes. He will arrive in April, accompanied by one of the most experienced grooms in England, and will make a part of a season, the price of which shall not exceed \$35.

I mention this that all who may be disappointed in getting the services of Havelock, may have a chance by waiting the arrival of "Napier,"
March 1853.

THE SOUTHERN PLANTER



Devoted to Agriculture, Horticulture, and the Household Arts.

Agriculture is the nursing mother of the Arts. | Tillage and Pasturage are the two breasts of
—Xenophon. | the State.—Sully.

FRANK. G. RUFFIN, EDITOR.

F. G. RUFFIN & N. AUGUST, PROP'RS

VOL. XVIII.

RICHMOND, VA., MARCH, 1858.

NO. 3.

For the Southern Planter.

Chinese Sugar Cane.

WESTON, Westmoreland Co., Va., }
Nomony Grove P. O., Jan. 21, 1858. }

MR. EDITOR:—Supposing there are many whose curiosity would be gratified by a statement of the result of the experiment which I tried last season in the culture of the Chinese Sugar Cane, I will now proceed to give as accurate an account of it as my memory will permit.

The first seed I planted the last of March; they were nearly one month in getting up. I only planted a small quantity at that time. On the 7th and 8th days of May, I planted about four acres in cane, in rows four feet one way and the hills about eighteen inches the other. When the plants got some four or five inches high it was then thinned out to three stalks to the hill, then cultivated exactly as Indian corn; its average height was about twelve feet. It commenced ripening early in August, or the seed commenced turning black. The cost of seed, fertilizers and cultivation, was fifty-one dollars. I kept an accurate account of all the time and labour employed up to the maturity of the cane; but I was so situated when grinding and boiling the syrup, that I could not keep an accurate account of expenses from the loss of time occasioned by not having a suitable mill, or one that was not liable to break every day.

I was under the necessity to plan my own mill, and have it built. The first one was

made for the cylinders to revolve horizontally, by attaching it to an eight horse power, which I found would not answer. I then tore it apart and constructed one to work with vertical cylinders, with a sweep at top for levers. With this mill I could express about sixty gallons of juice per hour. It was the latter part of September before I started this mill; there was some part of it either wearing out or giving away nearly every day, for nearly two weeks. I however succeeded in getting the defective part made strong, and then I had but little trouble except for want of hands to strip the fodder, cut the seed, and get the cane to the mill. As I had to be seeding my wheat at the same time, I had to rely principally on hired hands. I found that the riper the cane, the richer the juice was in saccharine matter. The first syrup, early in the season, required about seven gallons of juice to make one gallon of syrup. About this time we had a severe, killing frost and freeze. The latter part of October, five gallons of juice made one of syrup. I found the cane contained fully one pint of juice per stalk, taking the stalks just as they came.

I am satisfied there can be from two to three hundred gallons of good syrup raised per acre, with a good mill that will extract the juice well. I do not think that I saved more than one half as much as could have been made if I had been properly fixed in time. I however made five hundred gallons of syrup. There was a considerable quantity wasted, which I let the stock, horses, mules, hogs and cattle, feed on,

and I found they were remarkably fond of it; and as a fattening food, I do not think the cane has its equal. I believe one acre planted in Chinese Sugar Cane, for feeding purposes for stock of all kinds, except sheep, (I know not whether they will eat it or not,) is worth fully four times as much as anything else which can be raised on the same land.

One of my neighbours, who raised a lot of it the past year, thinks it far more valuable for feeding purposes than I have stated above. He thinks the product of one acre worth about as much as twenty in corn; as stock consumes every particle including the stalk, which in Indian corn is of no value whatever, while the stalk of the cane is more nutritious, if possible, than corn itself. From an estimate I made, I think I made about sixty bushels of seed per acre. This is only supposition, as I have not yet stripped the seed from the heads, and shall not be able to state how much I did make, as a considerable quantity was consumed by the work oxen engaged about the lot. Every chance they could get they would find their way to the scaffolds where the seed were placed to dry, and would eat as long as they could, and I never saw stock fatten faster than they did. In the making of the syrup I used lime water for clarifying the juice, first straining it to get rid of all sediments. At first I boiled it very slow until all of the green scum ceased rising, and gradually increased the boiling process until the syrup would hang from the edge of a skimmer—made of sheet iron—at least one inch below. There is no danger of burning it if the kettles are kept full. I found the broader the kettles the better they were for the purpose. I had six kettles in two arches, in rows, three in each. As the juice would boil away, I would fill the kettle nearest the chimney out of the next one to it, and transfer from the other kettle the contents of the next, and the empty one I would fill again with fresh juice, thus keeping it filled up until the syrup was finished. I think, with ten hands, I can take the cane from the fields, strip it of fodder and seed, grind and boil one hundred gallons of good syrup per day. It will require a pair of horses or mules for the mill, and a yoke of oxen to haul the cane. The last barrel of syrup I made I did not strip the fodder from the cane, but run it through the mill as it was, only cutting off the seed. That syrup was darker than the other, though I believe that was caused by the cane being frosted, as we had a freeze about two weeks previous to its grinding. I made a small quantity in a bell-metal kettle; the syrup made in it was about the colour of honey, that made in iron the colour of Orleans molasses.

I found my pen hogs improved much faster after I had commenced giving them cane, after I had passed it through the mill, than they had any time previous.

I used eighteen dollars and forty cents worth

of guano, De Burg's and Reese's manipulate guano, on the lot; the fertilizers costing four dollars and sixty cents per acre; the cultivation four dollars and seventy-one cent per acre; and the seed, which it took to plant the lot, three dollars and forty-four cents per acre. I could discover but little difference between the different kinds of fertilizers used. I think there was rather the largest growth from the guano.

I have no doubt the lot would have raised one or two more stalks to the hill, as I saw no difference in the size of stalks where there was but one, and where there were three. It is my intention to have some of the seed ground, and try what kind of bread they will make. If the flour or meal should be as good for the purposes of bread, it will be a much safer crop than Indian corn, as neither of the extremes of excessive wet or dry affects it like corn.

I will now, in the last and least important quality which it possesses, inform you of an experiment made with the juice, by having some of it distilled. I found that it took about twelve gallons of juice to make one gallon of—I suppose I must call it brandy, as it resembles peach brandy more than any other spirits I have ever seen. Though it has its peculiar flavor, it is the strongest spirits I ever saw.

Owing to my unprepared condition for the manufacture of the syrup, I could form no accurate account of expenses per gallon as previously alluded to, but think ten cents per gallon will cover expenses of saving, grinding, boiling, fuel, &c. I did not attempt to make sugar, my principle object was to test its value for syrup. There are different opinions in regard to it. Many prefer it to New Orleans molasses, while there are others who prefer the Orleans: but there is no doubt it is a good article, and after more experience has been gained, there will be but little molasses brought to the country.

There was sugar made in this county from the cane last Fall, by Mr. B. Walker, of an excellent quality; also some by Dr. B. L. Brown; so there is no doubt about its crystallizing, but to what extent none of us yet know. I examined last night a small quantity of juice which I put away for the purpose of seeing it would turn to vinegar. It appears as if it will be as good vinegar as any made from cider; though I cannot speak positively about it, as the barrel has been stopped tight. The syrup possesses one quality which no other molasses possesses, it has a tendency to constipate the bowels, rather than otherwise. There were several coloured children of my family who had suffered severely with Summer disease, and nothing would make a permanent cure until they got as much of the syrup as they were disposed to eat. After that I heard nothing more of the disease.

Yours truly,

W. W. BROWN.

Lime Applied in Small Quantities to the Red Lands of Madison County.

We are much indebted to the author for the following answer to a letter we had written him, asking information in regard to the application of lime to wheat in small quantities. The information he gives is very valuable.* Will he be kind enough this spring to make an experiment of lime without the addition of plaster. It will go far to verify the accuracy of his conclusions.—ED. SOUTHERN PLANTER.

MADISON COUNTY, Jan. 23d, 1858.

Dear Sir:—Yours of December last came to hand after some three weeks delay, requesting me to inform you of the results of my experiments with lime on wheat according to the plan suggested in the Southern Planter. I will now endeavour to give you the effects of my experiments; although I have not seen the plan referred to. In this, our section of the country, the wheat crop had become almost an entire failure from the effects of joint-worm. In the winter of 1855, I determined to try a top dressing of lime and plaster on my crop of wheat, (though small,) in the spring of that year. As my force was small, it became necessary that I should place the lime in the fields before beginning to spread it, which I did in the lump or stone, and covered it with dirt to keep it from blowing off, as ours is a very windy country at that season generally. I then commenced spreading the lime about the last of April on a field of about 25 acres oat and wheat stubble fallow, slaking the lime as it was needed for use, at the rates of 4 bushels of lime and three-fourths plaster per acre (with one of J. W. Faulks' guano and lime spreaders). The land was very stumpy, and of course the lime was irregularly applied. That field yielded, at harvest, from 10 to 12 bushels per acre of very nice, heavy wheat, whilst similar land in my neighbourhood gave only some 5 or 6 bushels per acre without the use of lime.

In the spring of 1856 I failed to get lime: consequently I could not apply it, though I had seeded the same field in wheat except about 5 acres, which was seeded in clover with the application of about 1 bushel plaster per acre. On the wheat that spring, the crop was not quite so good, yielding from 9 to 10 bushels per acre. In the fall of the same year, I seeded that land again, (stubble fallow). Last winter, you will recollect, was a very hard one, except the latter part of February, which was quite mild, and the wheat began to grow and look very well, though mine was very late. The month of March was very cold, and killed out a great quantity of wheat in this section; our wheat fields were naked until the first of May. The prospect was so gloomy that one of my neighbours, in walking through the field

with me, said he would not give the seed for what it would make. You can judge it was a poor prospect when I tell you we had to examine very closely to find the live roots. I applied about 10 bushels of slaked lime, and about 2 bushels of plaster per acre from the 15th to the 25th of April. About the middle of May my wheat began to hide the ground, whilst most of the fields in this section were quite naked; in fact all were except good low grounds. I harvested a very nice crop under the circumstances, (it being the fourth crop successively), supposed to make about 10 bushels per acre, whilst in my neighbourhood similar lands made from 3 to 7 bushels per acre. I have now about 8 acres of the same land in wheat again; the balance is seeded in clover.

In 1855 I had another field of about 30 acres, which had been worn out and turned out to the commons as almost worthless before I purchased it, which was the year before, (1854,) in time to clean up and plant very late in corn. In the fall of 1854, I seeded it in wheat from about the 20th of October to the 10th of November; in May 1855, I put about 8 bushels of slaked lime, and 1 bushel of plaster per acre, at that time the ground was almost completely naked, I did not expect to get more than my seed; there came a gentle rain in a few days and the wheat soon began to hide the ground. About the 20th inst., I sowed my clover seed at the rate of 1 bushel to 8 or 10 acres; at harvest, which was July, there was a very pretty crop of straw for the land, (taking into consideration the poor prospect in the spring,) and made from 5 to 6 bushels of wheat per acre, when similar land in the neighbourhood, without the use of lime and plaster, did not make more than 3 bushels per acre. There was on that land, as poor as it was, the finest stand of clover I ever saw—the growth was so large in August that it could have been cut for hay in many parts of the field. I pastured it very hard that fall, and in the spring, 1856, put about 1 bushel of plaster per acre on it, and that summer cut a very heavy crop of hay off; that fall I pastured it very close again, and in the spring of 1857, repeated the plaster at about the same rate. In April I put three calves on it, and kept them there until cutting hay time, and then cut a heavier crop off than the year before. That field has now a fine clover sod.

It is proper to state, however, that the land spoken of is nearly all red clay soil. In addition, I applied lime last May on a piece of sandy low grounds, that I had taken a crop of buckwheat from in 1854, and a crop of corn in 1855 and 1856, each, without the aid of any manures except plaster and ashes, which was simply applied to the plant. The land being thin, of course the crops were light. In the latter part of the month of October and first of November, 1856, I seeded a part of it in wheat,

and left the balance for oats, which was seeded in May, 1857, and some 4 or 5 bushels of lime applied, and from one to two bushels of plaster per acre. I got from that small field from 7 to 8 bushels of wheat per acre and upwards of 15 of oats, and a very fine stand of clover, which is very unusual on such land in this section.

My opinion is, so far as my observation goes, that lime as a top dresser to wheat and permanent improver will pay better by applying it in larger quantities. Say some 15 or 20 bushels the first time, and some 25 or 30 the second, and in like proportions afterwards, increasing the quantity every time you apply it to the same lands.

Yours respectfully,

JOHN BOOTON.

P. S.—The reasons for guessing at the quantity of wheat for 1857 is, it was destroyed by fire before it was fanned out.

J. B.

For the Planter.

Canvassback Ducks.

Of the multiplied varieties of water-fowls, which resort in the fall and winter months to the waters of Virginia, the Canvassback Duck is universally esteemed the best. So great has been the demand for this deliciously flavoured Duck for the table, that the cupidity of the sportsmen who rely upon the gun for subsistence, has for some years been highly excited. The annual slaughter is largely in excess of the annual increase. At no very remote period the variety under this exhausting process will disappear. Already, in the creeks emptying into the lower Potomac, these Ducks are almost unknown, and never seen in large flocks, unless driven from their favourite feeding-grounds near the points at which the salt and fresh water meets, by cold sufficiently intense to cover the upper part of the river with ice. But a few years ago they abounded in these creeks, and a half-dozen pair was not unfrequently the reward of a day's sport. To the ravages of the gun, at many points on the waters of the Chesapeake, are now added the snares of the trap, and the number of Ducks taken is thus quadrupled. The Canvassback, usually in company with the Redneck—a variety but little inferior—resort chiefly to those waters upon the beds of which the wild celery, a marine plant, is found. Without any accurate knowledge of the fact, we incline to the opinion that this plant is most abundant in, if not confined to, certain defined limits in both creeks and rivers, the centres of which limits are the points at which the salt sea waters, brought up by the tides, are met by the fresh waters from above. Tho' expert divers, the Canvassbacks, do not feed upon fish; the peculiar flavour of the flesh is generally attributed to the food upon which they subsist. Certainly there is a marked difference in the flavour of these Ducks, even though equally fat, when taken in those waters where the wild celery is not abundant.

We have frequently shot them in the beginning of a freeze, when the sudden formation of ice upon the fresher water of the upper Potomac, has driven them to seek for food in the salt creeks near the mouth of the river, and found them equal to the highest eulogy of the epicure. Again, we have killed them after they have for some weeks frequented those creeks, and though apparently in as good condition, found them to vary in flavour but slightly from the Redneck and Blackhead habitually frequenting these creeks, and feeding upon their grasses.

The Canvassback feeds with ease in deep water, is watchful, and except in cold weather, is rarely found near the shore during the day. It is less rapid and expert on the wing than most other varieties of Ducks, usually keeps a direct course in its flight, and hence passing the points which indent our creeks, presents an easy conquest to the experienced marksman. Taught greater caution, however, by repeated alarms, upon approaching the ambush they soon rise to an elevation beyond the reach of the gun. In very cold seasons, when pressed by hunger, they feed quite up to the sedge; and sometimes in places sheltered from the winds and waves, we have shot them resting on the beach.

The great demand for these Ducks, and the high rates which they commanded, led to improved and more efficient modes of destruction. Upon coming to the Potomac, in the months of October or November, before entering its creeks and inlets in search of regular feeding grounds, they collect with other varieties of Ducks and geese in large flocks, in the bays, which are more or less protected from the winds. To these when not feeding, they usually resort to rest, and at night to roost. Here they were too remote from the land for the ordinary shot-gun, and too watchful to allow the near approach of a boat. The men who cater for the world's mouth soon devised the means of overcoming these difficulties. Small schooners were procured and manned by two or more gunners; upon the deck were carried a large-sized, and one or more small-sized skiffs, and in addition to a supply of small guns, one of calibre sufficient to carry about one-fourth pound of powder and one of shot. This large gun was secured in the head of the large skiff. Thus equipped, they sail down the river. Upon discovering a bed of ducks, the large skiff is quietly lowered to the water, and paddled silently—if in such a position that the wind or tide will not float her—down upon the flock; when getting within two or three hundred yards, the gun ranging across the entire bed is fired, with murderous effect. The dead are secured at once; the wounded pursued in the small skiffs, and that with the small guns. Not unfrequently one hundred are thus killed at a single fire.

The drake Canvassback, though varying in

size but slightly from the Redneck, his most usual associates, is conspicuous among a thousand, from his plumage and graceful carriage upon the water. The broad, full, light coloured bill; long, erect black neck, and check-board back, at once distinguish him to the practiced eye. In form he resembles the Blackhead: breadth of chest in proportion to length of body, causing each to differ from other varieties of winter Ducks. He towers above the Blackhead in size, being quite one-third larger. In shape and conformation his mate is the same; differing, as do nearly all birds, in her plumage. That of the Duck Canvassback is less gay, her head slightly smaller—that and the neck a dusky brown colour, and the diamond squares of white and black but faintly marked upon the back. She is also slightly smaller.

It is a source of regret that no efficient law exists to protect this most valuable of all wild fowls frequenting our waters.

No instance of an attempt to domesticate the Canvassback has fallen within our observation. We have little doubt, however, of its practicability. Yet the effort, if successful, might preserve the variety without preserving the quality which has given to this Duck its world-wide celebrity. The flavour of its flesh, like the geranium beef of Madiera, depending upon the food the Duck feeds on. To perpetuate by domestication the Canvassback as known to us, it will be equally necessary to provide the plant for its subsistence, which imparts the flavour. This, we presume, would prove no insurmountable obstacle, though we are not sufficiently acquainted with the structure or history of the wild celery to affirm that art may supply the necessary conditions of its growth. Could some inland stream secured to private enterprise, with its bed, either by gift of nature or the pains-taking, curious handiwork of art, rich in those plants upon which the Canvassback feed, be filled with flocks of this *chef d'œuvre* of American birds, it might not only prove a present profitable investment, but further serve to hand down, in remote periods, to a few lucky Sybarites a present witness to the testimony of our age of the excellence of the *dish* of a Washington restaurant, long after even the popular tradition of the Duck shall have faded from the memory of the mass of men.

We may not close this passing notice of the Canvassback, without a plea for the preservation of wild fowl, and a solemn protest against the iniquitous trap, now commonly employed to entice to wholesale slaughter the winged inhabitants of the waves. The attacks upon them during the seasons of incubation by the spies who track them into the recesses of the wilderness, and the warfare waged during their hybernal visits to the seats of civilization, with small guns, were sensibly diminishing their numbers. Yet the State was re-

ceiving some compensation in the hardy race of skillful marksmen, who, attracted by the game, early learned the use of fire-arms,—and thus became material ready at hand for more important service in cases of State emergency. With the loss of game, the inducement to handle habitually the gun, will pass away from our rural population. To the men of tide-water countries the Ducks and Geese furnish the occasion for indulging in sport, which in mountainous and inland districts is offered by the deer and turkey. The use of the gun in the capture of wild fowl is being abandoned for the more productive trap. From a single one of these, in a single season, often 1500, sometimes 2000, Ducks and Geese are forwarded to market. These traps are so simple as to involve but a trifling outlay, and the coasts and inlets of the entire Chesapeake and its rivers will soon be dotted over with them. A few poles driven firmly down into the bed of the creek, at distances of three or four feet apart, encircling an area of a hundred or more square feet, and projecting about four feet above the water, are covered over with a net of twine, which net reaches quite down to the bottom, and is confined there to the poles. On one side a small opening is made in the net below the surface, and eighteen inches or more in width; from the edges of this opening a zigzag path leads, enclosed on either side by net. In the body of the trap a quantity of Indian corn is thrown; along the zigzag, corn is also scattered, and from its outer mouth in various directions to any required distance. The Ducks, attracted by these leads of corn, follow them up, and continue diving for the grains of corn until they pass the zigzag, and are securely within the meshes of the trap. Once in, their course is obstructed upon all sides by the net. No longer seeking for food, they lose the string of corn which had conducted them through the labyrinth of the zigzag, and cannot escape. The trapper in his boat, through a sort of doorway in the net, which he opens at the top, with a long handled crab-net, dips them up.

Numbers of Geese are taken in these traps, whilst no variety of Ducks, save the Canvassback, we believe, are cunning enough to evade its snares.

HEIGHT OF COLTS.—A very reliable rule to judge the height a colt will attain to when full grown, is the following: When the colt gets to be three weeks old, or as soon as it is perfectly straightened in its limbs, measure from the edge of the hair of the hoofs to the middle of the first joint: and for every inch, it will grow to the height of a hand of four inches when its growth is matured. Thus, if this distance be found 16 inches, it will make a horse 16 hands high. By this means a man may know something of what sort of a horse, with proper care, he is to expect from his colt.—*Tenn. Farmer.*

Clover Frozen Out.

While at the farm of Mr. James Bayley in Troy, he took us over a field of clover of fourteen acres in extent, which had been entirely killed by the frosts of last winter. In this case the clover was not frozen out by heaving, but had evidently been killed in the ground. We could and did take hold of the clumps, and pulled up the long tap roots from a depth of five or six inches. The clover had evidently not been eaten down close in the fall, for there was the remains of a fine full growth covering the ground quite thickly and evenly. It seemed as though a fire had swept over the field so completely dead was every particle of vegetation. We have seldom seen a more complete or thorough destruction.

The field lay on the top of a rising ground, and the top soil was a rich, loose loam, containing a good deal of calcareous sand. This top soil, we suspect, lies upon a subsoil of clay, which holds the water—especially in winter, and probably freezes on that account down to the clay. During the fine weather of last February, this soil, both from its exposure, and its natural qualities felt the quickening effects of the temperature which then prevailed during March, and which would and did freeze such ground when filled with water to some considerable depth, undoubtedly checked very suddenly the growth of the clover plant, choked it completely from the air, and thus caused it to rot as it did. This is an accident of climate, and the only remedy for it that can be suggested, is through tile-draining, which, by carrying off the water, and causing a full aeration of the soil would have the effect of raising its temperature and in some measure preventing its being frozen to such a depth or to such a degree as this field had been subjected to. It was evident also that the subsoil held the water largely, for around the base of the hill near the low grounds, several large springs welled out freely, and one of them gave a constant and steady supply even in the driest seasons. Mr. Bayley was about to summer fallow this field for a crop of wheat next season, and with this design was drawing upon it about 280 loads of barn-yard and sheep-fold manure. If the season is favourable, the field ought to average him

forty bushels to the acre, at the least. With the dead clover, and about twenty loads of the very best barn-yard manure to the acre, the amount of vegetable matter in the field, which will be applicable to the growth of the wheat plant, is enormous.—*Michigan Farmer.*

Vermin on Poultry.

Poultry sometimes suffer exceedingly by vermin or lice, which irritate and render them uncomfortable. We have found that blowing tobacco smoke among their feathers will kill them. Where hens have a chance to dig into a bed of ashes, or lime and ashes, and throw the dust up among their feathers, they will keep themselves pretty free from vermin. The Michigan Farmer quotes the following from a foreign Journal. We do not know what is exactly meant by the substance which is there recommended as "Black Sulphur." It is probably some of the sulphurets,—perhaps it is a sulphuret of antimony, or crude antimony powdered. This is of a black or dark colour, and contains a good proportion of sulphur. The paragraph alluded to reads thus:—

John Douglas, a regular poultry breeder, and who sometimes has 2000 head under his charge, writes to the Agricultural Gazette, that where poultry is kept somewhat confined they are apt to get infested with lice. This is particularly the case with setting hens. He recommends that with the sand and lime in the dust corner where the poultry will roll, there should be mixed half a pound of Black Sulphur. This will not only keep the fowls free from parasites, but will also give their plumage a fine, glossy, healthy appearance. When fowls are infested badly, Mr. Douglas first damps the skin under the feathers, and then dusts on the Black Sulphur. The insects will disappear in about twenty-four hours. Mr. Douglas once had charge of an Ostrich, which was pining from the effects of lice with which he was infested. The feathers next the skin were damped and the Black Sulphur applied. The lice were found dead the next day, and the Ostrich recovered rapidly.—*Maine Farmer.*

Paper Money.

In our last number we remarked upon the singular fact, that since the influx of gold from California and Australia began to affect the commerce of the world, general business in commercial countries has greatly increased in magnitude, but that increase has been accompanied by a general decrease in the volume of paper money in use; in other words, although

gold has stimulated great enterprises all over the world, it has actually supplanted paper as a circulating medium. In illustration, we have put together in the following table the official figures for Great Britain, France and the United States, showing the national exports of each country, and the amount of bank paper money outstanding at the close of each year:

	Great Britain.		France.		United States.	
	Exports. £	Circulation. £	Exports. £	Circulation. £	Exports. \$	Circulation. \$
1851.....	71,448,000	34,032,108	46,320,000	23,321,100	196,689,718	155,165,251
1852.....	78,076,000	39,904,419	61,640,000	27,596,400	192,368,984	145,468,097
1853.....	98,933,000	39,567,852	50,240,000	25,771,200	213,417,697	204,689,207
1854.....	97,092,000	38,258,367	56,520,000	25,478,800	253,390,870	186,952,223
1855.....	95,688,000	37,898,956	62,280,000	24,489,480	246,708,553	195,747,950
1856.....	115,610,100	38,206,074	64,010,000	24,493,280	310,586,330	177,250,071
1857.....	124,100,000	35,893,205	63,000,000	23,250,361	338,985,065	150,000,000

The paper money of Great Britain is composed of the issues of the Bank of England, of the private banks, and joint stock banks, and of all the Irish and Scotch banks. That of France is composed of the issues of the Bank

of France. That of the United States is the issues of 1,312 separate and independent banks in all the States. If we reduce the exports and circulation to dollars, and compare the year 1852 with that of 1856, we have results as follows:

	1852.	1856.	Increase.	Decrease.
Exports—Three nations.....	\$867,948,984	1,177,706,000	309,757,016	
Circulation “ “	532,193,302	479,711,841	52,476,461

Thus the surplus productions of those three countries exported has increased 40 per cent., while the paper money employed has decreased 10 per cent., and this operation has been continuous year by year. In the same period of time California has exported \$500,000,000, and Australia \$320,000,000, making \$820,000,000 of gold poured upon those three countries. Of this quantity of gold, the coinage has been as follows:

England.....	\$220,101,204
France	442,360,020
United States.....	441,208,000
Gold coinage—1851 to 1857.	\$1,103,669,024

Such has been the manufacture of gold coin in the three countries since 1851, and the effect

has been to drive out both paper money and silver. The exports of the latter metal to Asia from Great Britain and the Mediterranean ports has been in the same period \$275,000,000, and as we have seen, a diminution of \$52,476,461 in the floating paper circulation. Each country has largely increased its gold circulation. This is corroborated by the extraordinary rapidity with which the banks of New York, New Orleans, England and France fill with gold in the last two months, since trade has been destroyed by panic. The returns of the circulation of the Bank of France show a similar result. Before 1848 the smallest notes issued were \$100; since then notes of \$20 were issued. The amount of the different denominations outstanding Jan. 1857, as compared with 1852, were as follows:

	1852.	1857.	Decrease.	Increase.
\$1,000 notes.....	£19,600	2,000	17,600	
200 notes.....	17,120,480	14,860,200	2,260,280
100 notes.....	3,843,120	2,798,160	1,044,960
40 notes.....	3,386,520	2,908,160	478,360
20 notes.....	3,126,680	3,837,080	710,400

The small denominations exhibit the only increase. From all these facts it appears conclusively that gold has forced itself into circulation as money to the exclusion of paper, not only in England and New York, where security must be lodged for the notes, but also in France, and in those States where the issue of bills is unchecked by the requirement of any direct security. With a vast increase of the

products of industry, an immense activity in trade, and great enterprise in the construction of railroads, the amount of paper money outstanding has gradually decreased, and gold and silver has been more constantly in demand to scatter through the channels of circulation. It is evident that all that profit which the banks have derived from the use of their credits as money has been diminished. On the other

hand, their operations in discounting securities has increased in proportion to the increasing business. The following is a table of the discounts of commercial paper by the banks of the three nations:

	Bank of England. £	France. £	U. States. \$
1851....	11,746,805	49,720,000	413,756,799
1852....	13,356,036	72,960,000	414,211,390
1853....	16,643,651	113,800,000	557,397,779
1854....	15,806,634	117,760,000	576,144,758
1855....	19,777,860	149,840,000	634,183,280
1856....	18,962,155	170,480,000	728,029,910
1857....	30,081,102	194,101,000	650,000,000

The returns of the Bank of England and of the United States banks are the amount of paper under discount at the close of each year.—That of the Bank of France is the sum of all discounts made during the year. The increase of discounts is very large, being necessarily proportioned to the amount of business done. It is to be observed that the action of the banks of France and England are very different from those of New York. The latter being restrained by a Usury Law, have a uniform rate of 7 per cent. for money, and they discount directly to the merchants their notes bearing two signatures. It is utterly impossible for the banks to know the real position of those applying for discount. They only know that they are in business, and keep an account with them. In England and France the matter is different.—The discount is there, done through banking-houses, who charge uniformly a little more than the bank charges them. Thus the bank is governed by 30 members, of whom 10 form the board. There are in Paris 30,000 licensed traders who make bills for discount. These bills are offered to the banking-houses, who discount them, and who procure the money from the bank by re-discount. Thus each banker will send in a *bordereau*, enclosing some 200 to 300 of these notes, bearing the endorsement of the banker, in addition to the two names that he requires. Each of the directors glances over a *bordereau*, and passes it if it has a responsible bankers' endorsement. The bank charges its *minimum* rate of interest, and the banker charges a higher, discriminating between "gilt-edged" and less "respectable" names. The Bank of England operates in a similar manner, supplying the money or credits required, but charging a higher rate when the demand is more active. In times of stagnation of business, when goods will not sell, but obligations mature nevertheless, the amount of money required is greater, and it is supplied by the banks, through the banking-houses, to commerce. In New York the banks close business, refuse discount, and wait to collect. The two great banks of Paris and London have uniformly been disposed to be cautious of credit in times of speculation, when the public is prone to make use of credit to the utmost in pushing every species of enterprise. On the

other hand, they have come promptly forward to assist the public in times of pressure and reverses. The consequence is seen in the fact that the late panic has been lighter in Paris and London than in New York and Hamburg. For the future it would seem that the influx of gold is becoming greater in consequence of its enhanced value to other commodities, and will continue to supplant paper as a circulating medium, but it has the great disadvantage that it will be hoarded in times of panic.—*New York Economist*.

A Curious Question.

It is a singular illustration of the unexactness of agricultural knowledge, that the question how many seeds there are in the pound of our commonly cultivated field plants, should still remain to be answered. It is plain that the answer will not necessarily effect farm practice—for the quantity of seed which it is proper to sow per acre, is a matter to be determined by experience, and not by argument apart from trial; and yet surely it is most desirable, to compare the number of the seeds we ordinarily sow with that of the plants we raise. If in ordinary practice, 1,200,000 seeds of wheat are sown on every 40,000 superficial feet, or what is more extraordinary, fifteen to eighteen million seeds of flax are scattered on the same extent, about three to every inch of land, it is surely well to let the farmers know it. He knows very well he does not raise so many plants as this—and struck as he may be, by the enormous disproportion, between the means he uses and the results he gets, he will inquire into its causes.

The turnip seed employed per acre, numbers from 600,000 to 1,000,000, according to the kind and quantity adopted; this, if the rows are two feet apart, is two or three dozen seeds per foot of row, where a single plant alone is to be grown. No doubt, nothing like so many generally come up, but then there is a great destruction by the hoe, which will explain much of the discrepancy in this case. What, however, becomes of the 18,000,000 seeds of flax which are commonly—of the 6,000,000 seeds of oats which are sometimes sown per acre.—There is no destruction by the hoe in either instance here. A single ear of oats may contain 100 grains—a single plant will generally include a half dozen ears, but if 6,000,000 plants should yield as much as this implies, they would produce 100 loads of grain. Instead of 600 seeds a piece, they yield but half a dozen each to produce an ordinary crop of oats. It is plain that five-sixths of the seeds, or of the plants that they produce, are killed in the cultivation of the crop; and the proportion is vastly greater than this in the case of other plants. What is the ordinary seeding of the clover crop? Eight pounds of red clover, four of white clover, and four of trefoil may be

sown—that at least 6,000,000 seeds per acre—a seed on every inch of land.

There are about 25,000 seeds of Sain foin in a pound of rough seed, as it is called, and it weighs some 20 lbs per bushel; four bushels is an ordinary seeding, and they contain 2,000,000 seeds, or 50 per square foot of land. This the number, too, of seeds in an ordinary seeding of vetches. It is manifest in both these cases, there is an enormous destruction either of young plants or seed; and these are the two great divisions under which the causes of this great anomaly must be classed; faults of seed and sowing, and faults of cultivation. We are enabled, by the assistance of Messrs. Rendle, of Plymouth, to lay before them the following answers to the question—how many seeds to the pound?

Names.	No.	No.
	of seed	of lbs.
	per lb.	per bus.
Wheat.....	10,500	58 to 64
Barley.....	15,400	48 to 56
Oats.....	20,000	23 to 42
Rye.....	23,000	56 to 60
Canary grass.....	52,000	
Buckwheat.....	25,000	48 to 50
Turnip, (Rendle's swede,)...	155,000	50 to 56
“ (Cornish Harding,)..	239,000	“
“ (Orange Jelly,).....	233,000	“
Cabbage, (Scotch Drumhead,)...	128,000	56
“ (Drumhead Savoy,)..	117,000	50 to 56
Clover, (Red,).....	249,600	60
“ (White,).....	686,400	59 to 62
Rye Grass, (Perennial,).....	314,400	20 to 28
“ (Italian,).....	272,000	13 to 15
Sweet Vernal grass.....	923,200	8

[Scotch Paper.]

Reported Damage to the Corn Crop of the West.

Paragraphs have been going the “rounds” of the daily papers, for a week or two, stating that the corn crop has been seriously damaged by the cold weather in November, and the very wet weather which preceded and succeeded this cold “spell.” We have made careful inquiry from competent persons, and we find the following to be about the state of the case. The crop matured three to four weeks later than usual this season, having continued to grow during the whole of September, and in the northern sections of this State, Indiana, and Illinois and all Wisconsin and Iowa, a considerable amount was caught by the frost in an unripe state, rendering it inferior, and placing it in a state not suitable for keeping, and wholly unfit for seed; but drawing a line through the centre of the three first named States, the crop south of such line is fully matured, though, owing to the wet weather, has not sufficiently dried so as to keep in crib, and in many cases where it has been placed in shock, it moulded, owing more to the

fact of the rain having penetrated the shocks than to the dampness of the ears. It is a well known fact that the ears of corn assume a pendent position when on the stalks in the field; also that the husk is a complete protection from the rain, and that while left standing in the field, if it has ripened before frost, there is no danger. Intelligent farmers never crib their corn until it is dry, and hence we may feel satisfied the injury referred to is but partial. In Kentucky, and all south of there, the crop is large and safe, and we may safely conclude that the supply of this article will be very large.—The distillers are now using new corn altogether, and they inform us that it works as well as usual, though somewhat damp.—*Cincinnati Gazette.*

Tobacco Analysis.

The following Analyses of the ashes of the leaf and stalk of tobacco were made in the Laboratory of Prof. Chas. B. Stuart, of Randolph Macon College, by Mr. W. A. Shepard. We are personally acquainted with both of these gentlemen, having passed some time with them in the Yale College Analytical Laboratory, and from what we know of their carefulness and skill, we attach considerable value to the analyses as here given. The dried tobacco leaf and the stalk were carefully burned. One hundred parts of the dried leaf yielded about 18½ (18.47) parts of ashes, which is a very large proportion, when we remember that most kinds of wood and other vegetable substances give but two or three per cent. of ash. 100 parts of the ashes experimented upon gave as follows:

	Leaf.	Stalk.
Sulphuric acid,	- 2.95	4.12
Chlorine, -	- 5.93	14.42
Phosphoric acid,	- 6.08	6.70
Lime, -	- 35.83	26.34
Potash, -	- 30.46	35.32
Soda, -	- 2.95	1.14
Magnesia, -	- 6.96	8.30
Soluble silica,	- 1.59	17
Charcoal and sand,	- 6.95	3.88
Iron, merely, -	- a trace.	a trace.
	99.70	100.39

The absence of iron is somewhat remarkable, as there is usually considerable quantities of this substance found in the ashes of most plants. We see that full two-thirds of the ash is potash and lime. Every 100 pounds of dry tobacco would, according to this analysis, have taken from the soil about 6 pounds each of potash and lime.

The specimens used were of the variety known as the “Oronoco,” raised in Southern Virginia.—*American Agriculturist.*

The Veterinarian.

THOROUGH-PIN.

A thorough-pin may be defined to be a wind-gall running from side to side, occupying the hollow interval situated at the upper and back part of the hock. It consists of an abnormal accumulation of synovia at the upper part of the hock joint, causing a dilatation of the capsular ligament (the capsule which contains the synovia.) Work of any sort which causes the animal to overstretch its natural powers, especially hard up-hill work, when excessive exercise is forced upon the hock-joint (or more properly, joints) may be reckoned among the chief exciting causes of this disorder. Persivall states that straight hocks are more liable to bog-spavin and thorough-pin than those of an opposite formation. Solleysel also states that thorough-pin is often hereditary, and derived from the stallion. I, for my part, consider thorough-pin, &c., hereditary—*i. e.* that some animals have an hereditary tendency to dilatation of the capsular ligaments, and that mal-conformation of joints greatly assists hereditary predisposition. PAN.

NAVICULAR LAMENESS IN HORSES.

Any sudden step, such as a "false step," treading upon a stone whilst in a gallop, in short, any violent step on a hard substance, during which the tendon which passes over the navicular bone is injured, which bad effects are communicated to the capsule, and sometimes to the bone itself, will cause navicular joint disease. All feet, whether ill or well-shaped, are equally liable to this disease. True navicular disease, the effect of the cause, is the presence of an ulcerated spot, either on the surface or imbedded in the midst of the navicular bone. The secretion of joint-oil (synovia) is diminished. Every movement is accompanied with severe pain, and consequent lameness. The division of the nervus about the fetlock joint will effect a permanent cure; yet it is as well to state that sometimes after the operation the hoof will slough off, owing to the fact that all sensation, and therefore all nervous influence, is taken away. For a true case of navicular disease, the frog-seton and bleeding rarely give permanent relief. During action the animal goes very tenderly, that is, on his toes as much

as possible, as if he were travelling over hot cinders. Whilst in the stable he stretches his leg forwards and places his toe gently on the ground (called pointing.) If the animal has been the subject of the disease long, his foot, from resting it while in the stable, and favoring it during locomotion, will from disease, become contracted. PAN.

The Navicular Lameness in its early stages is not so incurable as is generally supposed. Hundreds of horses, with a little extra attention to their feet and shoeing, work on, and ultimately become sound. Of course, every disease has certain forms which are beyond the reach of medical treatment, and the navicular in the ulcerated or carious stage will defy the most talented efforts to effect a cure.—The treatment I recommend in confirm cases of this peculiar lameness is strong counter-irritation. As soon as the horse is sufficiently prepared, apply the firing-iron effectually round the coronet, which is the seat of much pain in this affection, making six or seven strokes about 1½ inches long, and continue each of these strokes down the hoof for about an inch. Apply a strong blister over the whole.—When this blister has peeled off, apply a second, which is usually sufficient to effect a cure in bad cases. Turn the horse out into a field or loose box, where he can exercise himself. In mild cases, the application of a sharp liniment round the coronet, and keeping the horse at gentle work in harness if possible, will frequently effect a cure. The navicular disease is found to exist in all kinds of feet, with the exception of the cart-horse, whose work is so widely different from other horses. There is no doubt it is constitutional to a certain extent. The symptoms which I have observed are a pointing or resting of the affected foot, a confined stumbling action, and the coronet feeling full and thickened. As the disease progresses the coronet becomes more thickened and inelastic; gradually the hoof undergoes an alteration in structure, the wall becomes ringy and contracted, and the frog or sole is morbidly thickened. When the lameness has arrived so far, nothing is serviceable but the operation of neurotomy. v. s.

SPLINTS, SPAVINS, RING-BONES, ETC.

Splints, together with spavins, ring-bones, &c., come under the denomination Exostosis, that is, an abnormal growth of bone from bone. The part of the limb between the knee and the fetlock consists of three bones—a large one before, called cannon (*Os metacarpi magnum*,) and two smaller, or splint bones (*Ossa metacarpi parva*,) placed behind the cannon on each side. These bones are united to the cannon by a fibre-ligamentous substance; but sometimes, from the animal being worked too early or too violently, inflammation ensues, bony matter is deposited in the place of the ligamentous substance, and bony union takes place, the nucleus for further deposition; particle upon particle accumulates, until a bony tumour (a splint) is formed. A splint is usually found on the inside of the leg, nearer the knee than the fetlock. Bony tumours appear occasionally on other parts of the cannon arising from blows or other external injuries and are also called splints. A splint rarely causes lameness, or decreases the value of the animal so affected yet, in the early stage of splint, when the deposition of bony matter is taking place (if I may so express myself) internally, that is before you are able to detect any bony protuberance by passing the hand down the leg, the animal will evince symptoms of great suffering, and go lame. For example, I recollect a very fine young horse being very lame, who had baffled the skill of many; the seat of lameness could be detected by no one, and it was finally determined to turn him out to grass. The animal had not been out two months before, on the inside of the caumon, near his knee, threw a splint, after which he walked perfectly sound. Treatment: Blistering, repeatedly applied is recommended by some, and often succeeds in reducing splints; but I prefer the performance of the operation of periosteotomy, which the following will explain. An incision through the skin above and below the splint is made, and the skin raised from the splint by means of a seton-needle.—An appropriate-shaped knife is now passed under the skin, and the splint is cut through, after which a dressed seton is introduced. This operation can only be performed by a qualified vet., under whose

care I should recommend “Top-boots” to place his horse. Through the medium of the above operation I have seen large splints reduced nearly level with the bone.

PAN.

Health of animals may be easily ascertained by placing the bulb of a thermometer under the tongue. Dr. Spurgin’s medical thermometer is best suited for these purposes—the heat of the stomach is correctly ascertained.

R. G. W.

GLANDES. Sponge the parts with a strong solution of chloride of zinc several times a day; and give large doses of yeast mixed with a little porter or beer daily for two or three weeks. Let the groom or veterinary surgeon take care to wash his hands well afterwards in the solution of chloride of zinc as a precautionary measure against infection. J. B. N.

PULSE OF ANIMALS. The following table, from Vatal, is inserted as a useful remembrancer to the practitioner and amateur veterinarian, &c., &c.:—Table of the number of pulsations in a minute in various animals—The horse, 32 to 38 (36 to 40, White); ox or cow, 35 to 52 (42 to 45, Clater); ass, 48 to 54; sheep, 70 to 79; goat, 72 to 76; dog, 90 to 100; cat, 110 to 120; rabbit, 120; guinea-pig, 140; duck, 136; hen, 140; heron, 200.

[London Field.

Butter-making and Butter.

One of our lady correspondents requests us to give some account of “butter-making”—how and when butter was invented—stating that such information would be interesting to many of our readers.

The origin of butter-making is unknown. From time immemorial butter has been made and used by the natives of Western Europe. Little is said about it by ancient writers. Galen and others do not mention it as an article of diet, and it is probable that neither the Greeks nor Romans employed it in cookery, nor set it up on their tables as food, in the same manner as it is enjoyed by us. As butter melts and becomes liquid at 90° Fah., this may account for the ignorance of authors as to its use in cold countries, in their day, because the seats of ancient learning were confined to warm climates, and geographical knowledge was then very limited.—

Through the indomitable courage and enterprise of modern travelers we have been made acquainted with the customs and habits of almost all tribes and nations—civilized and savage—so that we know of butter being used among many of the barbarous Arab and Tartar tribes inhabiting mountainous regions; and no doubt it has been known to them for many centuries. The Tartar, carrying milk for his frugal meal in a leathern pitcher slung over the crupper of his saddle, would perceive, after a hard ride, that there had gathered on its surface a rich yellow substance, unknown to him before, and which could have been produced from the milk alone. The cause of its development would readily suggest itself, and its pleasant flavor would incite him to reproduce it in the same manner. This is the way butter is now churned by some of these nomadic tribes. The milk is placed in a bag made of skin; the Tartar slings it across his saddle, mounts his steed, and trots up his butter. This, we believe, could not have been the way butter was first discovered by the inhabitants of Western Europe, as their most ancient practice of churning consisted in agitating the milk in wooden vessels; but how or when they discovered the art, we shall never know.

In Palestine, and other warm countries, olive oil holds the same place that butter does with us. As an article of diet, we are only acquainted with the butter made from cow's milk; but butter made from the milk of the sheep, goat, buffalo, and ass are known and used in various countries, especially in Asia. Some tribes of Arabs use the butter (called *ghee*) of the buffalo, which they drink clarified in a liquid state. In the East Indies there are breeds of goats which give a large quantity of milk; and among the hill tribes of the Himalaya mountains that take the same place as the kine tribes with us. One of these goats, lately brought to this city from Calcutta, (and by a Mormon family, strange to tell!) yielded on shipboard from six to eight quarts of milk daily.—We really hope that some of our enterprising agriculturalists, who have devoted so much attention to improving live stock, will endeavor to introduce and acclimatize such a valuable breed of animals. They can be raised and fed in mountainous regions

where cows would starve. Their milk is good, their flesh excellent, and their hair makes strong and durable fabrics for cold weather. Goats' milk and butter are also common in some parts of Europe.

Butter is the oil of milk, separated by the mechanical action of churning, from its other constituents—casein, sugar, and some salts. It exists ready formed in the milk, as oil does in various seeds, and can be churned from sweet (but not so quick) as well as from sour milk. It is called by chemists *butyrine* and *butyric acid*. In some dairies the whole milk is churned to obtain the butter; in others, only the cream. By the former method it has been asserted that more, but by the latter, superior butter is produced. It is our opinion that with proper care there is little difference in the results of the two systems. Grass-fed kine yield milk from which beautiful yellow butter is gathered; on the contrary, stall-fed cows give milk which yields a tallowy-looking butter.—This latter kind of butter is often-times colored to deceive the buyer, by annatto, the juice of carrots, and the flowers of the marigold. The color, therefore is not always the test of grass-fed milk. Some kinds of feed impart their strong and peculiar flavor to milk. This is the case with turnips, which should never be given to milch cow's except in very limited quantities. In winter, when grass cannot be obtained, the best kind of food is a question of no small importance. Milch kine should receive at least one meal per day of steamed or boiled food. The cheapest and best for this purpose are Indian meal, a few pumpkins deprived of their seeds, carrots, hay, and cornstalk; potatoes are excellent, and when cheap should be given freely. Cows which receive one meal per day of boiled or steamed food, during winter, yield at least one-third more milk than those which receive only dry food, the condition of the former at the same time being much superior.

Much has been said about the best methods of treating butter to preserve it sweet and from becoming rancid, under ordinary circumstances. There is no difficulty at all in the matter; and yet the quantity of inferior (bad butter) in proportion to good butter which comes into market, is immensely large. As all healthy, well-fed country kine, produce good milk,

no bad butter should be found in our markets. It reflects unfavorably upon the intelligence and thrift of our farmers that such butter is offered for sale. Cleanliness and care are two of the great secrets for making good butter. Holland butter has the highest reputation of any other; this is simply attributed to the great cleanliness of the people of that country, but there are other conditions also necessary. The dishes containing the milk should be perfectly clean, and kept in a cool, dry, and well ventilated apartment, and the milk or cream which is designed to be churned should never be suffered to become very sour—to have the least odor of putridity. It has been discovered that butter made from sour cream is very liable to become rancid, in comparison with that made from sweet milk, or sweet cream. It is, perhaps, owing to want of attention on this head during warm weather, that so much inferior butter is made. It requires longer time to churn fresh than sour cream; but the quantity of the butter obtained will pay for the use of horse power to churn, even on a farm having no more than five cows. After the butter has *come*, it requires careful manipulation, or working. It makes it tough to work it over a great deal, and the use of much water for washing takes away its fine flavor. The best plan to treat butter is to submit it first to severe pressure, by placing it in a cloth, and squeezing it in a vessel containing a perforated false bottom. This can be done with a cheese press, if not, with a pounder like that employed for clothes. After all the milk is thus squeezed out, the butter should be lifted and worked over carefully, and afterwards receive one or two clean, cool waters, to wash away every trace of milk. It should then be salted with the best salt, containing a minute quantity of white sugar mixed with it, and last of all it should again be submitted to severe pressure. The great object in thus treating butter is to remove all the water and milk from it, because these induce incipient decomposition and consequent rancidity.—By churning the cream before it becomes too sour, and removing all the water and milk from the butter, and by careful and thorough salting and working, the best quality will always be obtained.

Increased Fertility of Land.

Editors of the Winchester Republican:

DEAR SIR—I send you for publication a letter which I have just received from Mr. James Carter, who is, you know, one of our most intelligent and successful practical farmers. This letter cannot fail to be read with much interest by the farmer, for the experiment which he details clearly establishes the important fact that cultivated lands may be increased in fertility without the application of manure of any kind whatever.

Yours, ROBT. T. BALDWIN.

FLINT RIDGE, FREDERICK CO., VA. }
NOVEMBER 4, 1857. }

DR. R. T. BALDWIN:

DEAR SIR—Knowing the deep interest you feel in agriculture, and especially in anything that relates to the improvement of the soil, and believing as I do that those interests would be promoted by a more frequent communication among farmers in regard to their practice and experience, must be my apology for addressing you this communication.

About twenty years ago I determined to try what improvement I could make on a small portion of my farm by the use of clover and plaister. For the purpose of making the experiment, I selected a field of about thirteen acres, the soil of which was light and sandy. I had cleared this field, and had it in cultivation about eight years before I commenced to use clover and plaister on it; during this time it had been producing an average of about twenty-seven bushels of corn to the acre. I commenced my effort to improve the soil by sowing it with about one gallon and a half of clover seed and about one hundred pounds of plaister to the acre. I soon found that the plaister acted well on the soil producing a very heavy crop of clover, which was allowed to remain on the land, without either mowing or pasturing it off, for three years; at the end of which time it was ploughed up, in the month of March or April, when the clover was in a dry state, and planted in corn, and the next summer it was left over for stalk fallow and sowed with wheat in the Fall, and again sowed with clover and plaister in the Spring, and the same routine continued

up to the present time: that is to say, first either two or three years in clover without pasturing or mowing any part of it off, then corn succeeded by wheat on a stalk fallow.

The result of this practice is that the product of this field has been more than doubled, and is still increasing. For the last eight years it has averaged upward of twenty bushels of wheat and about forty-five bushels of corn; and last season, when the wheat crop in this section of country was remarkably light and of very poor quality, I harvested from this field twenty-four bushels of bluestem white wheat of excellent quality, and weighing sixty-four pounds to the bushel. It may be proper to remark that no fertilizer has ever been used on this field, except the clover and plaster.

Now, whether this improvement is the effect of *shade*, or whether it is mainly attributable to the decomposition of vegetable matter in the soil, I will not attempt to decide. I merely give you a faithful statement of the mode of culture and the result, and will leave it to you and others to draw your own inferences.

Very respectfully yours,

JAMES CARTER.

From the Baltimore Sun.

Hog Cholera.

INTERESTING REPORT FROM THE STATE CHEMIST.

The public attention has been for a long time directed to the existence of a fearful malady amongst hogs under the above name. It has prevailed for more than a year in the large distilleries of the West and South, as well as in the small pens of country farmers in the East and North; it has committed serious ravages in the southern and middle States; and early in the spring I was called on by the owner of a distillery here to attend to his hogs, which were rapidly dying. I went at once to see them, and obtained for examination the blood of many of the hogs in perfect health for purpose of comparison with that of these *in articulo mortis*, (in the act of dying.) These examinations, carefully made, revealed the fact of a high inflammatory condition of the system, as the subjoined analysis shows;

Healthy Hog Blood—Clot—firm, not

large; scarlet colored; solids. normal; fibrin as 2.33 per 1,000.

Diseased hog Blood—Clot—not firm but large; brown colored; solids, less than in the healthy fibrin as 5.60, per 1,000.

The blood in each case was taken from the arteries.

This condition of the blood evinced a high degree of inflammatory action, but did not show in what particular organs, structures, or structure the inflammation was located. To discover this I made numerous *post-mortem* examinations, and found, 1st: The brain, healthy; the heart do; stomach, do; bowels, including the greater or lesser intestines, do; kidneys, do; liver, do; melt or spleen, do; *lungs intensely diseased*; in the upper part they were engorged with dark, grumous, bruised-looking blood, and in the lower lobes the inflammation had proceeded to suppuration, being filled with purulent bloody matter, and entirely incapable of carrying on the process of breathing. The left lung was generally more affected than the right, and in every instance the inflammation had proceeded to a greater extent in the lower than in the upper parts of the lung—in some cases the peculiar structure of the lung could not be seen, so entirely had it become disorganized. In no cases were well defined abscesses found, nor was the windpipe inflamed but a short distance from the seat of the diseased lung.

Symptoms—The first symptoms were a laziness on the part of the animal affected, some loss of appetite, a kind of husky grunt approaching to a cough, sometimes a slight purging of the bowels, and a yellowish colored urine; then the animal would become more weak and seem to be paralyzed in the small of the back, totter about for a short time, and finally lay down and die.

The treatment was divided into two parts—prophylatic (preventive) and curative. With a view to the first the pens were scattered over with plaster of Paris and water slacked lime, whilst at the same time, they and the troughs were washed with gas tar. The curative treatment was the administration of soda ash and borilla. There is some trouble in the solution of borilla, and on this account soda ash should always be used with it. About ten grains of soda ash and the same amount

of borilla should be given to each hog two or three times daily, mixed in their food. This should be given to the healthy as well as the sick hogs. To the well it does no harm; to the sick it is a successful remedy. As in the human species, so in hogs—inflammation of the lungs is a most insidious disease, going on to the destruction of the patient before the mere symptoms give cause of alarm, and in many instances hogs which appeared healthy yet were seriously affected with lung inflammation.

The above remedies were used on about three thousand hogs, and in the utmost intensity of the disease. The number of their deaths diminished seventy-five per cent. on the second day after their administration, and in a short time the disease disappeared from the locality.

As soon as the hogs were manifestly sick they were put in pens to themselves and subjected to the above treatment. Of these about thirty per cent. recovered, whilst before all died.

Causes.—It is a disease of general atmospheric origin, influenced by special, local, exciting causes, such as the sweating sickness, black death, cholera and other epidemics, which at different times have devastated, more or less, all parts of the earth, and of whose intrinsic nature we know but very little. It is not confined to distilleries, but has also proved destructive in the country. It is not produced by strychnine, or any vegetable or mineral poison.

The disease attended with swollen jaws, the proper name of which is *hog quinsy*, prevailing in some part of the State, has no connection with the above, and can be most successfully treated by making incisions over the swelling and then pouring in a small quantity of salt and turpentine.

I should be obliged to persons throughout the United States, who have observed this disease, to examine the blood and the different organs, and report to me the results; should any be incapable of making an analysis of the blood I will with pleasure furnish them with instructions how to perform it.

JAMES HIGGINS,
State Agr'l Chemist of Maryland.

In the Zoological Gardens, sheep of almost every variety have been at times exhibited, but not one on which a portion of crimped wool has not been found at the root of the hair.

How to Raise Turkeys.

A correspondent of the Country Gentleman says: Will you allow me, in farmer style, through your paper, to give my experience in raising turkeys, for the benefit of your readers. I commenced raising turkeys about three years ago, but never met with any success until the last season, 1855. The winter previous I wintered one tom and two hens, and they laid sixty eggs, from which I raised forty-five turkeys from fifty hatched. Until the last summer I never could raise over one-fourth that were hatched.

My mode of raising them is as follows: I made each hen lay two sittings, which they will do without injury if they are well wintered. I sit two sittings under dung-hill fowls and the remainder under turkey hens. As soon as they are hatched, I have crates provided and immediately shut them up for four weeks, and then let them range anywhere on the farm. I feed them on Indian meal and keep butter-milk constantly before them. I throw about half an ounce of asafetida in their milk each day, and this keeps them lively, and they are never bothered with lice. When I let them out, they seem to grow up without any more trouble.

I think there is nothing that will afford our farmers greater profit than turkeys, if managed in this way. I think the whole secret of my success lies in the asafetida. My debt and credit stands as follows:

Dr.	
To three old turkeys,	\$3 00
To four bushels of corn,	3 00
To meal fed young ones,	5 00
To one pound of asafetida,	96
	<hr/> \$11 96
Cr.	
By 45 turkeys raised and sold at \$1,	\$45 00
By three old ones,	3 00
By two bushels manure,	3 00
	<hr/> \$51 00
	11 96
	<hr/>
Leaving a nett profit of	\$39 04

on three turkeys in one year, or \$13 profit on each turkey.

If any of your readers can give me any more advice on the subject, I will be thankful for it.

JASON H. TUTTLE.

Sandyston, N. J.

CABBAGES.—A correspondent of the Horticulturist says: "It may not be generally known that cabbages readily grown and are easily propagated by slips. A stump may be put out in the spring, and the sprouts as they vegetate cut off, the cut allowed to dry, and then planted.—When cabbages or cauliflowers throw off side shoots, they may be used in the same way. Cabbages thus raised have short stalks, and are sure of being true to the parent."

Great Trees.

The *California Farmer* gives an account of a visit to the Yosemite Valley, by a party from San Francisco in September last, and mentions some of the enormous pines which grow there, and of which the party took measurements. Some of the trees noticed in the following tables are said to have been 300 feet high, and several of them 225 to 250 feet:

Number of trees.	Circumference in feet.	Number of trees.	Circumference in feet.
1 tree	102	1 tree	53
1 tree	97	1 tree	51
1 tree	92	4 trees each	50
3 trees each	76	6 trees each	49
1 tree	72	5 trees each	48
3 trees each	70	2 trees each	47
1 tree	68	3 trees each	46
1 tree	66	2 trees each	45
1 tree	63	1 tree	44
3 trees each	62	2 trees each	43
2 trees each	60	2 trees each	42
1 tree	59	1 tree	40
1 tree	58	1 tree	35
3 trees each	57	2 trees each	36
1 tree	56	2 trees each	32
3 trees each	55	1 tree	28
2 trees each	54		

The aim was to see if we could not find one hundred trees over fifty feet in circumference; which was more than accomplished by both parties, as will be seen. Our party measured as follows (none less than forty feet):

Number of trees.	Circumference in feet.	Number of trees.	Circumference in feet.
2 trees each	100	3 trees each	59
1 tree	82	1 each from	58
1 tree	80	down to	52
2 trees each	77	2 trees each	51
1 tree	76	6 trees each	50
3 trees each	75	1 tree	49
1 tree	72	1 tree	47
2 trees each	69	1 tree	46
3 trees each	67	2 trees each	45
1 tree	64	1 tree	43
4 trees each	65	7 trees each	44
2 trees each	63	4 trees each	42
1 tree	61	3 trees each	41
10 trees each	60	8 trees each	40

Some of these were in groups of three, four, and even five, seeming to spring from the seeds of one cone.

The *Rhododendron Maximum*.

This is one of the finest ornamental shrubs of our continent, and though found along the whole range of the Alleghanies, and even into New England, is rarely seen except in the pleasure grounds of gentlemen of wealth. It is quite abundant in Virginia, in the mountainous districts, and as far west as Ohio. We know of several localities in Connecticut, and Rhode Island, where it goes by the name of

great laurel, and buck laurel. It is a tropical looking plant, an evergreen like the laurel, with lanceolate leaves from eight to twelve inches in length, and one or more in breadth. It delights in deep woods, and in moist swampy localities. The flowers are of a pale rose colour, and are formed at the ends of the branches. The buds are formed the previous season, and the large green button remains in full sight through the winter. They come out in July, a cluster of pale rose-coloured flowers, and there are few exotics that form a more magnificent appearance. There is an extensive locality of them near the banks of the Thames, not far from New London, Connecticut. They are found in a swamp and around the borders, covering, perhaps, a hundred acres of land. The place is much visited by the curious in the flowering season, and by rural improvers late in the fall and in the spring, for the purpose of transplanting the young shrubs.

This plant and seedlings from it, are found at our large nurseries, and are worthy of a place in any considerable plantation of ornamental trees. It is a common error, to plant them in sunny, unsheltered positions, where they are very apt to fail the first season. Their best position in ornamental grounds, is in the shade of other trees, and about the edges of fields of evergreens. They make a thick screen from the winds in winter, and in summer are the most attractive and brilliant of flowering shrubs. In their native localities, they attain a height of fifteen or twenty feet. This month is a good time to transplant them. The roots should not be allowed to dry.—*Prairie Farmer*.

From the *Southern Farmer*.

Extraordinary Tobacco Bed.

MESSRS. EDITORS,—On the 14th of April last I burnt and prepared a plant bed for tobacco plants in a rich glade in the forest, and on the 15th of April sowed the same, raking in the seed which had previously been soaked for 24 hours, and treading the bed. I then put on the surface a dressing of fresh stable manure dry, and covered it with brush. I put on afterwards, dressings of dry rotted hen manure, and dry fresh stable manure, three different times. On the 6th of June, after a good rain, I took off the brush and drew from the patch the following supplies of plants for planting:

June 6th & 7th, 37,500 plants.
June 9th, 40,000 plants.
June 12th, 35,000 plants.
June 17th, 18,000 plants.
June 26th, 40,000 plants left in the patch.

170,000

You may publish the above if you choose. No guano was used on the patch.

JOHN HENRY.

Red Hill, Charlotte Co., Va., June 26, 1856.

*For the Planter.***Ornithological Sketches, No. 2.**THE BLUE BIRD—*SIALIA WILSONII*.

This beautiful warbler measures seven inches in length, and ten in extent of wings. Its upper parts are of a bright azure blue colour, its breast of a yellowish brown, and belly white. His large dark brown eye beams with intelligence, and is quick in its change of expression,—now melting in love, now flashing in war. He is a constant resident of Eastern Virginia. I saw some during the very cold winters of 1856 and 1857, when my thermometer was several times 8° below zero. Though the greater portion of them moved off to more Southern climes. I have been informed that very few of them winter in Maryland. They extend their summer migrations as far as the State of Maine. None, however, are seen in the British Provinces. They reach as far South as Mexico; and I have been told by a Mexican volunteer, that they were numerous in the Northern part of that country. But the observation of most men, as to birds, or anything else in which they are not particularly interested, is little to be relied on.

During the month of August, numerous detached flocks of blue birds, raised North of this, pass over us, uttering their plaintive cries. These cries are said to resemble those of the robin redbreast's of England,—a little bird dear to every child's heart, from the story of the "Children in the Wood." Audubon says that its attitude, and many of its habits, so forcibly remind one of the redbreast, that in New England it is called the blue robin.

With us, the blue birds begin to select their places for building early in March. Even in the depths of winter, they seldom pass a hole in a tree or stump, or a box, without peeping into it. They however sleep in such places at night, and it may be with the intent of securing a snug bed that they scrutinize them so closely. I think, however, it is for the purpose of future nidification; for they are not thus engaged in cold wintry days, but only when the winter is mild and spring-like.

Towards the close of January last, whilst ploughing a field, I observed a number of blue birds busily employed in picking up the earthworms from the newly turned furrow. It was as mild as May. There were a good many large stumps in the field, and several had hollows suitable for them to build in. As the birds would fly out of the way of the returning ploughmen, they would alight on these stumps. The males would invariably peep into the holes, and sometimes enter them.

In the cold days of winter, when no insects are to be had, the blue birds feed on numerous berries, which our lanes and woods afford,—the cedar, holy, dogwood, black-gum, mistletoe, &c. They are particularly fond of the dried

persimmons which hang on the tree. Indeed what animal is not fond of this delightful fruit? Birds, turkeys, chickens, geese, sheep, hogs, cows, horses, dogs, and men—all greedily devour them. But our little bird feeds on insects whenever they are to be had. In the mild, moist days of winter, the snails creep out, and down upon them he pounces from a fence stake. He may also be observed watching along the hedge-rows and ditch-banks, to pick up the grasshoppers that creep forth to stretch their benumbed limbs. I suppose that more of this pestiferous tribe of insects are destroyed by blue birds than by any half dozen genera of other birds put together. He is a friend to man in every respect, and injures him in none. This is the bird, above all others, that we should most highly prize, protect, and encourage. Yet, because he is so common, he scarcely attracts a passing notice, and is frequently shot in wanton sport, or because he appropriates a box of the purple martin—a bird not half so useful, so pretty, or so interesting as himself. And thus it is that native genius and excellence is coldly neglected with us, and every spring of a coxcomb is petted and caressed, whose chief merit consists in his living or travelling on other than Virginia soil. But a better time is coming, both for our birds, our journalists, our orators and our poets. I, by no means, wish to run down genius or usefulness simply because it is not Virginian. But I do not wish it to be despised, or lightly esteemed, because it is. I duly estimate the philanthropy and the *philornithy*, that would throw our country open to all good men, and useful and pretty birds,—it matters not of what hemisphere, they are denizens. And my heart warms to Mr. John Gorgas, of Wilmington, Delaware, and Mr. Thomas S. Woodcock (is he a descendant of Adam?) of Manchester, in England, and the Hon. J. H. Petus, of Charleston, S. C., for their laudable efforts to introduce the larks, black birds, thrushes, and goldfinches of England into our country. Who would not like to hear the famous nightingale pouring forth its melody from a sweet briar on the road-side, whilst our unrivalled mock-bird, perched on an overhanging cedar, was in silence drinking in its love-inspiring strain? I warrant you, that in less than a fortnight he would sing every note of the nightingale better than himself. Americans, whether birds or men, are great at imitation as well as invention. Even now, while I am writing on this snowy day, Feb. 4th, 1858, a young mockingbird, that is in a cage with a cardinal gross beak, at my feet before the fire, is inimitably taking off the awkward notes which the latter has been attempting all day. There!—the red bird will stand it no longer; in a fury he has knocked him off the top perch. But to return from this little interruption.

Who would not like to hear that sky-lark, of which we have all heard from our mothers,

when they tell us we should "rise with the lark." This traditional bird we have never heard nor seen; yet does not the very idea awaken poetry in our minds—that we, here in Virginia, should see that very lark at the golden break of day, rising on his wing and soaring from our sight, long before he is visible to the eye of man? It makes one sigh to think how very long these larks are coming. What has become of the twenty-one pair that Mr. Gorgas turned loose in the spring of 1853? I thought that I saw and heard one singing in Capt. Bassett's field, on the Pamunkey, in June, 1855, whilst in company with Dr. Cabell of Alabama. But I have never heard it since, though I have ridden there repeatedly to look for it. It came up to the idea I had formed of the lark, except that it lit upon the top of a cedar for a moment,—and the books say the English sky-lark never lights on trees. It was a strange bird to me. In May, 1857, I saw another strange bird, seated on the top of a very tall birch in my low grounds. It had a very loud, flute-like whistle, and appeared to be of a bulky body, with white and black plumage. I would have shot it for examination, but I feared it might be one of Mr. Petus' English black birds, which he set at liberty in Washington City in 1853. And here I may as well ask if any one can tell, through the Planter, what has become of those birds? I have heard that the cockney Know Nothings of Baltimore, who sometimes buy double-barrel shot-guns, to go out a sporting for snow birds, king sparrows, and fine, fat wrens and tomtits, killed several of Mr. Gorgas' larks in the fall of the year they were turned loose. The Vandals!

But allowing all due credit to these larks for their insect-destroying property, for which they were mainly imported, I will venture to say that they will fall vastly below the blue bird in this respect. For if the lark is valuable in consequence of his building in the fields, our little Virginian friend will build just where you desire him. All that you have to do, is to put up a little box six inches square, with a hole large enough for him to get in. Place it anywhere on your farm,—on the fence, in a tree, or on a stack-pole; and there he will rear his young; and there he will destroy the grasshoppers and every kind of worm or bug that creeps or flies, and is large enough for a bird to see and seize. And if you will build him a double box, he will raise you three broods every year, without an accident. If none of his progeny die, (and they are very hardy,) in three years from the time you put up his little box, you could have upwards of 1200 blue birds, from this single pair. And all of them will stay with you, if you put up boxes for them, and the insects on your farm be numerous enough to support them. Does any one think that grasshoppers could ever be a pest in Virginia, if we would duly encourage and provide for the blue birds? Do recommend to

each farmer without delay to put up as many boxes as he can.

As soon as the spring opens, the male blue birds begin their animated songs, mixed with a vein of plaintiveness, carrying the mind back to other and happier days. All are busily engaged in paying their addresses to the coy females; with tremulous wings and pendent feet they flutter around and above the loved ones, stretching their throats and trying to give variety to their rather monotonous notes. Frequent and long contested are the battles between them. Four or five will engage in a meleé, and fall in a knot to the ground, where in silence they will tug at each other with beak and claw. Spent with fatigue, they will lay and pant, looking like a beautiful cluster of flowers, with their upraised wings of blue. I got near enough last spring to have picked up a party thus employed. So soon as they discovered me they flew off, but in a minute or two they were at close quarters again. After a week or so all are paired, and there is a general peace, unless one attempts to take the box of another. The blue bird is very tenacious of his rights; like "Ole Virginny," he "never tires."

Some years ago, a pair selected a hole in a large martin box in my yard. As the martins arrived in small parties, the male flogged them all out, nor would let one even settle in the box. But as the season advanced the martins began to pour in in such quantities they were too many for him. There must have been at least an hundred of them. Long and fierce was the war,—still the blue bird did not retreat. By degrees he ceased fighting the martins, and the martins him. By common consent a little mimic chimney on the west gable of the box was relinquished to the blue bird as his stand point, to superintend his domestic affairs, and to keep a sharp lookout for insects and hawks. And there he would stand for hours, erect and silent, whilst his mate was quietly setting in her nest below him, undisturbed by the martins. After he became more accustomed to the new order of things, he would prune his feathers, or carol his song at his ease, whilst the box, top and sides, was black with the chattering martins. There were fifty holes in the box, and every hole but that occupied by the blue birds had a pair of martins, whilst the garret of the box held a good many pairs. Whilst the martins would frequently quarrel and skirmish among themselves, I never saw one molest the blue bird after the truce. Nor did a martin ever alight on his chimney top during his absence that I saw, and my curiosity was so much excited on that point that, you may depend on it, my observations were very frequent during the season whilst I was about the yard.

Thus did the blue bird maintain his ground, and retain his rights in peace, and with the respect of the noisy fraternity, till their de-

pasture,—when he was almost ready to bring out his second, if not his third brood. And so it will ever be with States, men, or birds, who will unflinchingly and fearlessly maintain their rights, with all the power God has given them.

I could relate many other interesting facts about my little friends, but the great length of my communication admonishes me that it is time to draw to a close. So as my Lord Coke says, "let this little taste suffice."

F.

For the Planter.

Coal Ashes.

CABIN POINT, Feb. 4th, 1858.

Editor Southern Planter:

STR.—This being a snowy day, I have taken the liberty of transcribing some remarks from the *Working Farmer*, published in England in 1759, a short paragraph on the use of coal ashes. I do not know that they have been used by more than one farmer in your neighbourhood; and as their must be a great deal in Richmond that many would be glad to get rid of, I write to call your attention to them. I have used some on asparagus beds, and both my gardener and myself think it hastened their growth, and made them more tender and large.

"Coal ashes, from their calcareous quality, are singularly beneficial to stiff and sour land, for which purpose they are successfully used in the vicinity of some great cities where coal is burnt for fuel. They open clayey grounds, and correct their bad qualities. The gardeners and farmers about London know their value, and make a profitable use of them, particularly to bring into order those grounds which have been dug for brick earth. After spreading these ashes upon the clay bottom, they either sow Horse-beans, or set the early Spanish, and sometimes the Windsor-bean in those spots; or else they lay such lands down with rye-grass—which generally succeeds very well. Mr. Bradley blaming the people of Staffordshire and the counties adjoining where there are coal-pits, for not improving their heavy lands by manuring them with coal ashes, says that wherever there are a plenty of coal-pits, there can be no want of good, profitable land."

Bradley's Husbandry.

"Mr. Mortimer agrees entirely with Mr. Bradley, esteeming sea-coal ashes as the best manure (what is sea-coal ashes?) of any sort for cold lands, the most lasting, and fittest to kill worms. Their sharp and drying quality opens the pores of stiff soils, and discharges a great deal of their vicious quality. Mr. Worlidge looks upon them as an excellent compost when mixed with horse-dung. He adds, that they are a great curer of moss and rushes in moist grounds."—*Worlidge's Husbandry.*

I hope some of the good farmers about you

will try coal ashes, and give the public the result of their trials. I have a good deal of land that would be benefitted by their use, but I have so small a quantity that my wife uses them on the lawn, and as far as they go improve the grass very much.

I have heard that around Williamsburg some farmers sow corn, and think it equally good for fallows as peas. Do you know anything about it?

The spring wheat you gave me some three years ago on condition I would give you a bushel as soon as I made two, looks very well. I think I can furnish you with two bushels (should we live) next fall. I sowed it in the fall. I am no believer in spring wheat or winter oats as a distinct class.

I have forgotten the name of the wheat. I wish you would come to see me.

Yours very respectfully,

NATH'L M. OSBORNE.

Tribute to the Planter.

The following tribute to the *Planter* is worth publishing as a testimony to the value of agricultural papers. It is at the same time most agreeable to our feelings. [ED. SO. PL.]

TARBORO, N. C., Jan. 6, 1858.

Messrs. Ruffin & August, Richmond, Va.

Gentlemen—It has been my habit until the last two or three years, to remit punctually on the 1st January, payment in advance for the agricultural papers I read.

The "*Southern Planter*," was the first agricultural paper I ever saw, some sixteen years ago. I was then a *poor* journeyman tailor.—A new desire sprung up within me after reading the paper. It was to be a farmer. I went to work and secured some fifty subscribers or upwards to the *Planter*. Since then our county (Edgecombe) is known far and wide as the banner agricultural county of the State. Thousands of acres, worn down and worthless, have been resuscitated and made to produce as much cotton per acre as the virgin soils of the South. Is it too much to say that the "*Planter*" has had something to do in bringing about this state of things. May I not be pardoned in arrogating to myself some little credit for my part in the matter.

I am and have been a farmer for the last 7 years, and a successful one at that; at any rate, I am *comfortable*, if the possession of this world's goods can make one so. Conscience is not as easy, however, as it might have been, had I not allowed myself to forget, in the multitude of business, to discharge the trifle—the poor pittance—that is required of me for what I do not hesitate to admit, has been instrumental, in an eminent degree, to *that success*.

Yours, &c.,

ROBERT NORFLEET.

(No. 1.)

(Papers Communicated by the Nottoway Club.)

Prolific and Common Corn.*Annual Experiment reported to the Farmers' Club of Nottoway, by Richard Irby, 1858.*

To test the propriety of planting Prolific or Double-eared Corn, I procured two varieties. One called *Hicks' Prolific*, bearing from two to five ears to the stalk, and another, name not

known, which has a very large single ear. Both varieties were planted on rich flat land which produced from nine to ten barrels to the acre, worked and planted alike and the only difference in management was that the Prolific was cut down stalk and fodder and stacked up and other managed in the usual way. I took four stalks of each variety and measured and weighed them as well as I could with a common measure and spring balance. The results are as follows:

PROLIFIC CORN.

1st stalk, 3 ears weighed, unshelled, 2 lbs.	Shelled corn 1½ lb.* measured 1 quart—
2nd " 5 " " " 2¼*	" " 1¾ " 1 " *
3rd " 3 " " " 2*	" " 1¾ " 1 " "
4th " 3 " " " 2	" " 1½ " 1 " —
4 stalks	8¼* lbs. 6½* lbs. 4 quarts.

LARGE CORN.

1st ear wheighed, unshelled, 1½ lbs.	Shelled corn 1 lb. measured ¾ quart.
2nd " " " 1½ " "	" " 1 " ¾ " —
3rd " " " 1 " "	" " 1 " ¾ " —
4th " " " 1½ " "	" " ¾* " ¾ " —
4 ears " " 4¾	3¾* 2¾—
Showing that Prolific Corn made more of corn unshelled	3¾ lbs. Shelled corn 2¾ lbs. 1½ quarts.

These figures may appear strange to some, but I tested the two kinds several years since, with about the same results. I will here say, that this Prolific Corn is not a new variety, but has been cultivated by myself and neighbors for many years. Any corn can be made to bear two or more ears by carefully selecting the stalks that bear more than one ear from year to year. The small eared corn has also the advantage that it matures and comes earlier.

Respectfully submitted.

(No. 2.)

Comparative Value of Mexican and Peruvian Guanos.

Mr. PRESIDENT:

In discharge of former obligations, I have exhausted nearly all the materials at my command for either essays or experiments.

I propose to present some observations concerning the comparative results from the application of Mexican and Peruvian Guano.

The first was in corn on contiguous acres, and much more favorable to the Peruvian—but on wheat it was reversed. Whether the strength of the Mexican was in reserve for future development, or whether its adaptation to wheat is a peculiar characteristic, it may be difficult to decide. I, last fall, tried a similar

experiment, directly in wheat, and at this time, the effect is most favourable to the Mexican and the Peruvian exhibiting but little benefit. My own impression is, that the Peruvian Guano, with which we are now supplied, is not as good as formerly, or certainly its effect is not so advantageous. It may, in part, be ascribed to the seasons, or to repeated application to the same land.

It is certainly a matter of important consideration whether its use to the extent, at one time considered so beneficial and remunerative, can be continued for the future, or what substitute can be provided? and my object has been so to present the subject as to secure a comparison of opinions on such an important matter.

E. G. BOOTH.

(No. 3.)

Experiment with Guano and Super-Phosphate of Lime.

I used Guano, and De Burg's Super-Phosphate of Lime on corn, alternating them, leaving a row with nothing applied. Neither of them showed any beneficial effects as compared with the rows where nothing was applied. It is proper however to say that this guano was not pure, or rather it was totally inefficient, wherever applied.

Respectfully submitted,
May 14th, 1857. T. F. EPES.

* Means a fraction over.

— Means a fraction under.

(No. 4.)

Essay on Neat Cattle.

Addressed to the Agricultural Club of Nottoway County.

MR. PRESIDENT:

The present high price of the staple crops of this section of Virginia, it is feared, will cause them to engross so much of the time and labour of the farmers as to lead to the neglect of other important interests connected and necessarily identified with a judicious system of rural economy. It is one of the fixed facts in the history of man, if it is not one of the laws of his nature, to prefer present to prospective profits; and to say to himself, Why take ye thought for to-morrow? Sufficient for the day are the profits thereof. Ten, fifteen and twenty dollars per hundred for tobacco, and more than an average price, for cotton and grain of every description are stimulants to industry and effort, which too frequently have their origin in an inordinate desire to accumulate the representatives of wealth, at the expense of the solid and substantial comforts of life, and which must ever prove unfavourable to a well-managed attention to the minor interests of the farm.

These reflections have induced me to select as the basis of my annual contribution to the Club, the subject of Neat Cattle. It is not my intention to say much about the different breeds, because I have very little experience as to their relative value,—the adaptation of the improved breeds to our climate, to our means of subsisting them, either through the summer or winter seasons; supposing that they require a better keep than we are accustomed to give to our native stock.

It is my opinion that we would do better to improve those accustomed to our climate, and inured by long habit to hardship, than to import or dip too deeply into the improved blood, before we are better prepared to support them according to their physical wants and constitutional requirements. By a judicious selection of the parent stock, male and female, and more attention to the feed and management of our native breed, there can be no doubt but that they can be made to meet all our wants, and that it is difficult, if not impossible, to fix the point of improvement to which it may not be made to attain.

It is most probable that Noah carried with him into the ark seven pair of the bovine family,—and as the sacred historian gives no account of Short or Long horns, Devons, Herefords, or Ayrshire, it is fair to presume that they were all of the same breed. The buffalo of our Western prairies and the domestic cow, it is well known, will breed and their progeny are capable of propagating their race,—conclusive evidence that they all sprang from the same parent stock; and that the varieties are

the results of accidental causes, such as domestication, climate, keep, &c.; and that whatever has been effected elsewhere in the scale of improvement, may be accomplished here and everywhere by judicious management.

At two different periods my stock of cattle was nearly killed out by the distemper. The first time I purchased several milch cows, from an extensive poor ridge, sandy farm, with little or no flat land attached to it, consequently indifferent grazing land; neither of the cows purchased proved to be good milkers, nor were any of their descendants, though they produced large and likely oxen. My second purchase was from a farm of an opposite character, lying on Little Nottoway River and the Whetstone Creek, with extensive low grounds, affording excellent pasture. These—four in number—all proved to be superior milkers, and have transmitted that character to their descendants. My stock will at this time compare favourably with any in the neighbourhood. It is believed that neither of the farmers of whom I purchased ever owned, and most probably never saw a Short-horn, Devon, Hereford, Alderney, or Ayrshire. I therefore conclude that good pastures are indispensable to make good milch cows, whether of the native or improved breeds.

The proper amount of stock to be kept on a farm, is a question of much importance, and yet one of difficult solution,—which must be determined by circumstances weighed and settled by each individual farmer. It should never, under any circumstances, be beyond the capacity of the farmer to keep them at all times in a thrifty, improving condition. Interest and humanity alike sustain this position. They should be well sheltered and cared for during the severity of our winter and spring months; (no farmer will ever regret erecting comfortable shelters for his stock;) and plentifully supplied with something better than the hen's nest grass and broom-straw of our old fields and standing pastures in summer, and wheat-straw and corn-stalks in winter. There is, in fact, a very great want of system and forethought on this subject throughout our community, which calls loudly for reform.

The value of the cow is not duly appreciated. She is a daily labourer of untiring industry, gathering the richest materials from the hedges, fields, and bogs during the day, and bringing them home and depositing on the farm at night during the spring and summer months; and in the fall and winter, a machine, of wonderful adaptation, for grinding up and preparing the coarse offal of the farm crops for the compost heap, thus paying for her keep at all seasons of the year, independently of the comforts and luxuries furnished her owner in beef, leather, milk, butter, and cheese,—to say nothing of the patient labour of the faithful ox.

How, then, can we best improve our native cattle? This, to my mind, is the question which most interests us. Reformation on other subjects is always preceded by conviction that we are in error, either in principle or practice. The next step is to cease to do wrong and learn to do right. In the treatment of our stock, we follow blindly the example of our fathers, as we do in many other things, without inquiring into the suitableness of their practice to our circumstances. They lived in a rich, fresh country, enjoyed the benefits of an extensive range, made heavy crops, and with little trouble or expense could support a large stock. In this regard, as in their tobacco crop, they ran for quantity more than for quality. Now, all this was probably the best for them; but it by no means follows that it is the best for us. They considered their stock as of minor importance; had probably very inadequate ideas of their importance as manufacturers of manure and improvers of the farm, and hence they made but little provision for their comfort, and cared little for their improvement.

We must look at this subject through a different medium. We will do well to forget the lessons of by-gone times, and follow the clearer lights of reason and experience by first reducing the number, and secondly by improving the quality of our stock. The latter is to be accomplished by selecting the best and most perfect of both sexes for breeders, having in view meat, milking, and working qualities,—for they are all indispensable characteristics of a good race; and keeping those qualities progressive by well-timed crosses, judiciously made according to the directions and rules laid down by experienced breeders, or as our own observation and experience may suggest. And in the next place, by a liberal supply of food, of the quality to insure health and thrift throughout the year, dry, warm shelters during the winter and spring months; and, in short, by giving that attention to the comfort of the animal which its importance and value demand.

The time is coming, if it has not already arrived, when we shall have to adopt the plan of soiling, as a remedy for excessive grazing; and for this purpose the Chinese sugar corn and spurry promise well, in addition to clover and other succulent crops which are always in use among us. The additional quantity of manure which may thus be raised will abundantly compensate for the trouble and expense incurred, as well as promote the comfort and enhance the value of the stock. We do not pay sufficient attention to the root crop, the best means of supplying our cattle with succulent food during the winter and spring,—so necessary to counteract the constipating effects of the wheat-straw and shucks, and which they greatly need to keep their digestive and assimilating organs in a healthy condition. If we would give our cattle two or three feeds of roots per week, we

would not see so many poor dyspeptics turned out in early spring to live as best they can,—striking emblems of the ill-favoured and lean-fleshed kine spoken of in Genesis, evidences of a past and not prophetic of a coming famine.

I once raised a large crop of Mangel Wurtzel and fed them to my stock in early winter, with manifest advantage, but found they did not keep well in the kiln, and have not since repeated the experiment. I can speak more favourably of the turnip crop as a winter feed.

Last July I had fallowed and well prepared three acres of very thin land, too poor to put in corn when the field was last in cultivation, to which was applied three hundred pounds of Peruvian and Mexican guano, well mixed, of equal parts of the two, sowed broadcast, and thoroughly harrowed in and mixed with the soil, and seeded to turnips. I had also nearly an acre of highly manured land in turnips. From the two patches I fattened fifty-eight hogs, one beef, and fed three milch cows plentifully through the winter. My oxen (two yoke) have also been liberally fed on them, and occasionally my cattle have had a feed of them, say twice a week, and they are not yet exhausted, (20th of April.)

I have no hesitation in saying, that in my opinion, in no other crop would the same land and guano have produced me as much feed or have been as beneficial to my stock. My cattle and oxen were never in better condition at this season of the year, notwithstanding the severity of the winter and spring and the scarcity of provender, from having made the last year an unprecedented short crop of corn, wheat, and oats, in consequence of the ravages of the chinch-bug and the drought,—both of which were very destructive on my farm. I can therefore confidently recommend to my brother farmers the more extensive cultivation of the turnip crop as a winter feed for their stock.

A. A. CAMPBELL.

(No. 5.)

Best Time for Sowing Clover Seed, &c.

MR. PRESIDENT:

In accordance with the requisition of the Club, I submit the following report upon the best time of sowing clover seed:

At what seemed a very favourable time in February, 1854, I commenced sowing clover seed. Something interfering, I did not finish before the tenth of April. Finding that whereas what was sown in February did not stand at all, what was sown in April stood very well, I concluded in 1855 to try again the relative advantage of seeding at different times. Therefore I seeded part in February, part in March, and part in April. The result was, that although that sown in February was

on tobacco lots, that sown in April on old field stood much the best. That sown in February and March was tolerably good. This year I have sown altogether during the first week in April, and now it looks very finely, having come up well. I did nothing to it after sowing. In April I endeavored to select a time when the ground was dry; in the *other months* when the ground was puffy from freezing and thawing.

I would also report that last year I commenced sowing guano broad cast for tobacco, previous to bedding up the land; but at the suggestion of a neighbour, I abandoned that plan and put the balance in the drill, using equal quantities; the subsequent treatment was the same. I applied about one hundred and fifty pounds at the time of hilling up the tobacco. The result was very greatly in favour of that upon which the guano was sown broad-cast,—it being much earlier, larger, and riper.

Respectfully submitted,

THOS. R. BLANDY.

Mules and Mule-breeding.

How important this branch of rural economy is becoming in the United States may be seen by the following notice of *The Columbus Inquirer* copied into the veterinary department of *Porter's Spirit*, and the comment accompanying it: "A few days ago one hundred mules were sold in Scott County, Kentucky, at an average of \$177 each. Our Southern planters have here another illustration of the fact, that they can never fully realize the high price for cotton until they raise their own stock and provisions, for the high price of one is always attended by a corresponding rise of the other." In view of this fact, we propose to devote a little space to the examination of the history of the mule; the advantages which he possesses, as he does possess advantages of some kinds and for purpose over both the horse and the ox; his qualities, and the best and most profitable mode of raising him for the market, and for producing his best qualities and characteristics. To tell persons now-a-days that the mule is the hybrid between the horse and the ass would appear to be so absolute a truism that the recipients of the information would be very apt to laugh at the informant, and to set him down as nearly akin himself to the latter species of the equine family; and yet, strange to say, few persons, comparatively speaking, know precisely, if indeed at all, what is or is not a

mule—much less that there are two distinct animals, both the offspring of the horse and ass, one of which is, and the other is not a mule; less, again, what are the distinctions between the two. To the Romans this fact was well known, and different names were assigned to the two animals, one of which names we have exactly followed; although this modification of the creature is so rarely seen among the speakers of the English language, that the word in question is rarely heard, would be understood by comparatively few, even well-informed, persons, and is not to be found in Johnson's dictionary or the ordinary cyclopædias. The offspring of the male ass and female horse (mare) is truly the mule—in Latin, *hemionus*, of half ass. The offspring of the male horse, (stallion) and the female ass is the hinny—in Latin *hinus*, a word which conveys, as does the former word *hemionus*, a distinct sense, lost in the corresponding English synonyms, for *hinus* is a derivative of the verb *hinnire*, to neigh; and in fact the hinny neighs while the mule brays. Nor is this all: for while the mule has the greater external resemblance to the ass, so has the hinny the greater external resemblance to the horse; and a more minute examination carries us yet further, and shows us that the mule, not only in outward-form but in temper and characteristics, has more of the ass in nature—the hinny more of the horse.—It is in a considerable degree by the knowledge of these facts, which are positive that the breeder is led when he insists that, in order to produce the greatest advantages on the offspring, the excess of blood and vital energy must be on the dam; since he finds invariably that from the jackass and the mare, whether the latter be the merest dung-hill or as thorough bred as Spilletta, the mother of Eclipse, springs the mule of the ass type.

The mule has long ears, slightly modified and shortened by the intermixture of the horse; the hairless tail with a tuft at the end, the narrow quarters and thin thighs, the erect mane, the elongated head, the slender legs and narrow, erect hoofs, and the voice of the ass. The hinny has a smaller, better formed head, the flowing mane and full tail, the general form, the finer coat, larger legs, broader feet, and the voice of the horse. What

would at first appear remarkable is that the mule, or offspring of the male ass and mare, is a far larger animal than that of the stallion and female ass; and not only that, but frequently than either of his parents. In proof of which may be cited an advertisement from *Porter's Spirit of the Times* of Jan. 8 of last year, offering for sale "a splendid pair of jet-black mules, *seventeen hands three inches high*, beautifully matched, three years old.—They were got," it is added, "by the finest Maltese jack in Kentucky out of thoroughbred mares, got by Wagner and Gray Eagle," &c. Now these prodigious animals, fully equal in height to the largest London dray-horse, which would probably weigh above two thousand pounds, if their height be correctly stated, (which one may presume to be the case, since no benefit could arise to the advertiser from a deception which must instantly be discovered on examination by a purchaser) are the produce of a sire, the largest specimens of which never exceed the stature of a small horse, and dams which in the absence of any knowledge on the subject, we may set down as probably not exceeding fifteen hands and two inches, and certainly not exceeding sixteen hands, inasmuch as the latter is, ordinarily speaking, maximum height of the race-horse. Here, therefore, we have the hybrid offspring overtopping the sire in height by at least three hands, or twelve inches, and the dams by two hands, or eight inches. A convincing proof, by the way, of the absurdity and hopelessness of expecting to produce an enlarged progeny by breeding small, weak, undersized mares to large, powerful stallions; and a strong argument in favor of having the size, length and room to contain the fœtus on the side of the female parent.

The mule, again, which is the offspring of the male ass, has the great excess of his qualities, the incomparable endurance, the patience, the faculty of subsisting and keeping himself in good condition where the horse would starve, and the extraordinary sure-footedness of the ass, and it must be added, in a great degree, his temper, his obstinacy, stubbornness and passive vice: although it is believed that, both in the ass and mule, these bad qualities have been greatly fostered and increased by the cruelty and neglect of ages

—no such qualities being observed in the beautiful, docile and tractable asses of the East, where they have been from the most remote ages used as the saddle animals of the superior classes—and that they may by kind and judicious treatment be greatly modified, if not eradicated.—The hinny, on the contrary, although harder, more patient, more enduring of privation and scanty fare than the horse, is infinitely inferior in all these qualities both to the ass and the mule: while he is at the same time gentler, more tractable and nearer to the horse in temper. Strong arguments, it will be observed, for seeking invariably to have the qualities of blood, temper, courage, spirit, on the side of the sire; form and size on that of the dam.—An attempt has been made to establish a positive principle on the facts as here stated, to the effect that "the male gives the external configuration," or, in other words, the locomotive organs, while the female gives internal, or, in other words, the vital organs; which is generally stated with scientific precision. Thus: "The male gives the animal system, the female the organic or vegetative." As might have been presumed, however, and is too often the case with quasi-scientific dogmas, this attempt at reducing the deductions of theorists to the formula of pure science has proved a total failure; and those who would maintain the principle by illustrations drawn from the vegetable kingdom have failed yet more signally, for here again the greatest authorities diametrically differ; Linnaeus asserting that, of plants, in all hybrids the internal or fructifying organs are all male; while Du Candolle asserts directly the reverse—that the organs of vegetation are all given by the female, those of fructification by the male. Again, in regard to horses, in the reports lately published in France by the authority of the Government, in relation to the African and Oriental horse, General Daumas asserts, from his knowledge of Arab horses in Algeria, that all the most valuable qualities in horse-breeding are derived from the stallion. The Inspector of the French studs insists on the contrary, from his own Asiatic experience on the subject, diametrically the reverse—that the mare has the chief influence on the foal. Thereupon Gen. Daumas applied to Ahd-el-Kader, who has done more

with the Arab horse, and may be presumed to know more of the Arab horse than any living man, having all the traditional lore of the Arab preserved on this subject from remotest ages, together with much of the information and intelligence of the European, who replies unhesitatingly: "The experience of centuries established that the essential parts of the organization, such as the bones, the tendons, the sinews, and the veins, are *always* derived from the stallion. The mare may give the color and some resemblance to her structure, but the principal qualities are due to the stallion." This opinion of one than whom no one is better qualified to speak *ex cathedra*, which has only at this late moment come to our observation, in an article from *The Westminster Review*, while it exactly confirms the argument on which we have so strongly insisted in our papers on "The Improvement of the Breed of Horses," sets at rest, so far as it goes, an assertion which has been put forth in reference to mules—to the effect that the mule proper, or offspring of the male ass, is a modified ass; while the hinny, or offspring of the stallion, is a modified horse. This, again, is an attempt to force that into a scientific formula which cannot be so treated. Both the mule and hinny are clearly modified asses—that is to say, they have both more in their composition of the ass than of the horse, but the proportion of that *more* depends on the male, and not on the female parent. It appears that the vital energy and power of transmitting organization is stronger in the ass than in the horse probably, because he is entirely in-bred, less changed by domestication, and nearer to his natural condition than the more cultivated and more highly favored animal. The zebra and quagga are yet more potent in this strange power of transmitting properties than even the ass; for it is an established fact on well authenticated record, that a thoroughbred mare having once produced a striped foal to a quagga, continued for several successive generations, when bred to thoroughbred horses and having no further connection, with the quagga, to produce striped offspring, the stripes becoming fainter and fainter in each successive foal. A fact which has led, in connection with other circumstances, some of the best French physiologists to the conclusion that

a female which has once borne a hybrid becomes herself a hybrid, and can never again bear a perfect animal of her own race; a fact certainly worthy the considerations of persons who, like the breeder of the advertisement quoted above, stint mares of such blood as Gray Eagle and Wagner to Maltese jacks. Only imagine their faces, should they after this breed the same mares to a Lexington, a Monarch, or a Revenue, and find the progeny on its appearance long eared, with a stripe along its back and a bar across its shoulders!

It is clear, then, that while in all hybrids of the horse and ass, the latter gives the greater proportion both external and internal characteristics, it is determined by the sire, not by the dam, in what degree that excess shall exist: and this principle will lead to a full understanding of how mules may be bred to the best advantage.

In a recent paper we showed the difference between the mule and hinny, or the offspring of the male ass and mare and that of the stallion and female ass. We also demonstrated that in both animals the type of the ass prevailed over that of the horse, but the degree or proportion in which the prevalence exists depends on the male animal; consequently, that in breeding mules, as all other hybrids, the spirit and principal characteristics are to be sought in the sire, not in the dam.—Thus, if we are breeding mules, on the spirit, courage, temper and characteristics of the male ass, everything will depend in the production of the like qualities in the progeny; while, so long as the mare is sound, strong enough, bony enough and roomy, it will matter very little, as far as the characteristics of the young are concerned, whether she be a Suffolk Punch, or as pure a thorough bred as Spiletta, the mother of Eclipse. Therefore, in the case of the pair of gigantic mules mentioned in an advertisement quoted as begotten by "the finest Maltese jack in Kentucky" out of two thoroughbred mares "by Wagner and Gray Eagle," there is no doubt that the excellence of the mare has everything to do with the excellence of the progeny. But not only is it very certain that the Gray Eagle and Wagner blood is wasted to no purpose by this prostitution to vile uses, in giving the

qualities of blood to the mules, but it is even questionable whether two stout, sound active Canadians, or Normans, would not have thrown better foals to the same jack than these noble mares, thus sadly misapplied. On the other hand, if we are breeding hinnies, we want the very best stallion we can find, in blood and bone, so that he be not disproportionately large; while, in the female ass, we only require soundness, and sufficient size to render her roomy enough to contain a fœtus so much larger than her own natural progeny as the hinny foal is likely to do so, this side of the question is worthy of no further consideration, and with a few words more we quit it altogether.

It is generally asserted that the hinny has been tried and found nearly a worthless animal, though admitted to be a beautiful one; and has only been bred occasionally, in Spain, since the great decline in the number and quality of the male asses, and of mules generally from the want of male asses, arising from the frightful consumption of those animals during the Peninsular war, and the subsequent incessant civil wars which have convulsed that unhappy country, has rendered it necessary to supply their want.

We are not inclined to adopt this assertion. We believe that the hinny, so far from being a worthless animal, is as good as he is handsome, and superior to the mule for the uses for which he is fitted—that is, for a saddle animal. But being inferior to the horse as a saddle animal, and inferior to the mule as a beast of draft or burden, in which respect alone the latter can compete with the horse, he has no special place of his own; and, although it seems impossible to have the right man, always in the right place, the impossibility does not extend to the right ass. Now, there has not yet been discovered a right place for the hinnies; and, therefore, it having been worth no one's while to cultivate hinnies, they have fallen into disuse and got a bad name. It may, however, well be doubted whether, in the great demand and inadequate supply of handsome, clever ponies suited for carrying boys, young ladies, and timid or valetudinarian or aged persons, who require horse exercise, it might not prove an exceedingly paying speculation to import a few of the very finest and largest-sized Maltese or

Arabian female asses—which, by the way, command no price as compared with the jacks—and to breed from them to the best and highest bred, undersized, thoroughbred stallions. We have seen abroad, in past years, one or two hinnies, with ears but little larger than those of a coarse pony, with long thin manes, full tails, sleek, shining coats, which were altogether beautiful animals. They have a good deal of spirit, and the patience without the stubbornness of the ass. If, however, it has not been a matter of profit heretofore to raise hinnies, it has been far otherwise in the case of mules. So highly were they esteemed by the Romans, that we are informed by Pliny, quoting Varro on husbandry, that Quintus Axius, a Roman Senator, paid four hundred thousand sesterces, equivalent to thirteen thousand dollars, for a male ass, peculiarly qualified by size, beauty and spirit for the propagation of mules. The same writer informs us that the *profit* of a female ass in Celtiberia, corresponding to Andalusia in Spain kept for the breeding of stock for the same purpose, was calculated at the same sum. The latter statement is far more remarkable than the former, since the male ass might be expected to serve very many mares, and to produce one or two such foals annually, for perhaps twenty years; while the female ass could not be hoped to produce above one per annum, of which one could hardly reckon on more than one-half turning out males, which alone are directly profitable in mule raising; it shows however, the high estimate set at a very early date on these animals.

They are now, probably, more largely bred and more highly prized in the United States than in any other country in the world, unless it be South America; and justly so. As draught beasts, beasts of burden, and for field labor, they surpass any other animal in the world; and the use of them allows the noble horse to be applied to his own proper uses, (the saddle, or speedy light carriage draught) and not to field labor or the rude and sordid drudgery to which he is too often degraded, and to which he is wholly unfitted. It is claimed for the mule, and rightly, that he can do his own work, that is to say, field work, heavy teaming, and carrying pack-burdens, all as well as the horse—the last item better than the horse, and

twice as much of each one of them as the horse, provided he is not hurried, keeping himself in perfect condition, where the horse would knock up and starve; that he can do all this on half the food and with half the care that the horse requires, although the more food and the more care both have the better they will do their work; and lastly, the mule, being an animal of great longevity and great retention, or conservation, of both his vital energies and his physical powers, is able to work, to the advantage of his owners, twice, if not thrice, as many years as the average of horses. These are the inducements to breed the mule, and to apply it strictly to the purposes for which it is best fitted, and for which nature seems to have intended it. The great utility of the mule, in this respect, is shown by a curious calculation, which will be found in a prize essay on the mule, written by Samuel Wyllys Pomeroy, originally published in *The American Farmer*, and republished in the last edition of *Mason's Farrier*, of the saving to be made in the draught of packet-boats on the canal from the Hudson River to Lake Erie, by the substitution of mule in place of horse labor. It is stated, he says, that a packet-boat on the Erie Canal requires a team of three horses to tow it 16 miles, going at the rate of 80 miles in 24 hours; and that the relays required demand 15 horses for each nautical day. Setting the time, from Lake Erie to the Hudson, at 5 nautical days, 75 horses will be required; and setting the food, stabling and care of each horse at 50 cents per diem, it will cost each packet-boat above \$35 per diem for the subsistence of its cattle alone, without counting deterioration by age, labor or accident, at which rate every packet-boat must expend \$375 for every trip to the Hudson River and back from Lake Erie. Now the same number of mules will do the same amount of work, at least as well as the horses. They will do it at one-half the cost of subsistence; and they will do it fifteen years longer than the horses. In other words, one team of mules will do the work for the same length of time that three teams of horses will do it. For a team of horses cannot be counted on for such work for above seven years at the utmost. Thus, the mules will save the prime cost in twenty-three years of two teams of horses of three each, beside the

interest; and will do the same work, during the whole time, at one-half the cost, beside the interest on the saving. If this calculation be a correct one, and we have entirely failed to detect the flaw in it, taking into consideration the enormous number of boats, and the gigantic traffic, daily and hourly increasing which pass through that grand artery of American Commerce, the sums of money to be realized by the gain of this single substitution, baffle the powers of the imagination to conjecture them. It is sufficient to say, broadly, that it would require but a few years, far less than the life time of a single man, with that sum annually capitalized, and invested at compound interest, to pay the capital of the national debt of England. Of so vast importance to a country, in an economical and national point of view, may be and are the labors of the meanest of its animals. It was our intention to bring this subject to a close in the present paper; but we find that we have so much yet to say concerning what we believe to be a material error in the American method and system of mule-raising, of the real plan to be adopted, and the proper animals to be selected and used as parents, on both sides, for the raising of a far better class of mules than we are now raising, perhaps than we, or shall we say it?—any country ever has raised, that we must unavoidably defer our conclusion to our next issue.

In a recent number we have published two papers on this subject; the former giving a general account of the animals, with the distinctions between the two varieties, the mule proper and the hinny; the latter relating the value, utility and particular qualifications of the former of the two varieties. In the present paper, we propose to treat of the difference between the mule of Europe, and that now generally raised in the United States—the error, as we believe it to be, the present American system of breeding—and the best plan to be adopted for raising the most valuable mules.

Inasmuch as asses are not bred to any extent in the United States, it is of the first consequence for breeding to import fine jacks from their native countries, of the breed and description most suitable to the purposes for which they are intended; and of the second, to cross them with properly-selected mares, so as to raise

mules of the best type, size and substance for general work. And it will be well here to observe that, in the United States generally, the work of the mule is, and ever will continue to be, unless some radical change takes place—which is not to be expected—in the tastes and habits of the people, field-work, agricultural labor and team-draught on the roads, as opposed to use under the saddle or in pleasure vehicles. In the prairies, plains and mountains of the extreme West, on the Mexican frontier and on the California route, they are, and will be used as pack animals, and in a minor degree as beasts for the saddle, both for travelers and for the trappers of those wild solitudes; but this is the exception, and not the rule.

Now, any person who has traveled on the Continent of Europe, in those countries where mules are in use, especially Spain and Portugal—for the mules of Italy and Switzerland are of an inferior kind—cannot have failed to observe that it is the medium, and even the small-sized mules which are the most highly esteemed; that the great majority of the race do not exceed fourteen hands in height, and that of fifteen is a rarity; and that those nearest to the standard first named, are most prized for their hardiness, while they consume far less provender in proportion to the amount of labor which they are capable of performing than the loftier animals of the same breed. In the United States the ratio of value in the mule is exactly the reverse of the above in general estimation—the largest mules being the most highly prized; and, as a matter of course, all pains are taken to raise the standard and to breed them of the greatest possible height. In this aim the breeders of the United States have been eminently successful, if that can properly be called a success, the effect of which is to produce what one aims at producing, though in fact he had done better to produce something else. And it may be said that the average size of the mule of the United States is not inferior to that of the ordinary working horse, while that of many is vastly superior. We have at present within our own knowledge, many teams of working mules employed in drawing iron from New Jersey foundries, and in carting coal and ore, which vary from sixteen to

seventeen hands in height, while some exceed by half a hand the latter standard, which, it may be said, is never attained by any horse, unless it be the huge London dray-horse, an animal incapable of working faster than at a foot's pace, and only bred in fact for show and ostentation, not for utility. How it is that an animal sprung from the cross of two species, the sire of which is always greatly smaller than the dam, should be larger than either parent, is one of the unexplained mysteries of breeding; but the mode in which it has been accomplished is no mystery. It is by selecting the very largest and loftiest jacks of the breeds used in Europe for the saddle, and in Spain for the draught of public conveyances and private pleasure carriages, and breeding from them out of the tallest, largest and most roomy mares that can be procured. That such dams should produce hybrids larger than their sires is in the natural course of things, since, as we have pointed out in our previous papers on horse-breeding, it is the mare, furnishing the matrix of the foal, who gives the size and bone to the progeny. But why such mares should produce a much larger offspring to a mule infinitely below themselves in stature than they would bear to a stallion of their own race, equal or even superior to themselves in height, is not to be accounted for by any known principles of physiology. The fact is, however, as stated, and the result is not desirable. For the mule of increased size appears to approach somewhat nearer to the horse in organization, whereas it is desirable that he should approach nearer to the ass; he is a slower and more sluggish animal, is less enduring of labor, less capable of toiling under extraordinary temperatures of heat, which is one of the admitted points of superiority in the mule over the horse—and, being much heavier in proportion, is apt to sink his small, narrow, compressed hoofs far deeper into the ground where the soil is deep and the roads are sticky and tenacious than the smaller breed, while he will consume from one-fifth to one-third more provender. Yet even at this he will consume so much less, while doing more constant though somewhat slower work than the horse, that three of the large sized mules may be kept in perfect condition on the same amount of food which is re-

quired for the support of a pair of the nobler animals.

It is evident, therefore, that where mules are not required for show or speed, as saddle or carriage animals, as they are not, and probably never will be in this country, the smaller sized animals are the most profitable both to raise and to keep for the purposes of labor.

Now, it should be understood that there are at least three different varieties of asses—beside the small, common jack, supposed to be of African origin, generally of a light-gray color, with a black stripe along his back, and a transverse list or bar across his shoulders—all of which, except the last, are more or less used for breeding in this country, although the mules bred from him are infinitely the most hardy of all, though the lowest in stature. The other breeds are these: First, the large, coarse, heavy Spanish jack, with slouching ears, and a dull, plodding gait, from which the mules for agricultural purposes are ordinarily raised on the Peninsula. It is this breed which has been so much exhausted by the consumption of the Peninsular war and subsequent internal commotions that it is in some districts all but extinct. Second, the Andalusian jack, with shorter and more erect ears, more active, spirited and sprightly than the foregoing species, yet sufficiently strong and well provided with bone. This animal is probably no other than a slightly degenerated descendant of the Arabian species, which has become somewhat coarser and larger boned, as well as less spirited, in consequence of his long residence in a colder climate, though still warmer than his native land, and perhaps of crossing with the species first described. The third is the Arabian jack, which is to the ass what the thorough-bred is to the horse—taller in height, lighter in limb, slenderer in bone, with a high-carried head, shorter and always erect ears, and a higher and more sprightly spirit than any other of the ass species. It is said by those who have seen and examined this animal in its native land, and who are competent to judge that it bears so close a resemblance to the wild ass, *Dziggai*, (*Equus Hemionus*) of Persia and Mongolia, as described by Pallas, the naturalist, that it is not to be doubted but that it is descended from that swift and

beautiful creature. Were the saddle, or harness before pleasure vehicles, the object of mule-raising, this jack or his representative, the Maltese jack, which is evidently directly sprung from him, with little or no degeneracy or deterioration, would unquestionably be the best sire. But for draught mules for heavy work, these jacks are too slender in the limbs, and especially too long in the pasterns to make eligible sires; least of all is it desirable to cross them with thorough-bred mares—from which, indeed, to raise mules at all is a profanation—or with mares of high blood and light bone: Since, as before stated, it is from the dam particularly in all cross breeds, and equally so in hybrids, that we are to look for the bone and form, while from the sire we obtain the characteristic spirit, whatever that may be.

In our opinion the Maltese jack should never be chosen as a sire for working mules in this country; but if he be, he should be bred to close-ribbed, strong-boned, stocky mares; Canadians we should prefer to any other form. It is our belief, however, that the Andalusian jack, if it can be procured, is the most eligible sire for the United States; but as it is understood to be difficult to procure his race, it would be, perhaps, advisable to commence from the commencement and proceed to breed our own jacks for the purpose of breeding our own mules, instead of having recourse to constant importation of mules. This in the end would prove to be not only the surest, but the cheapest method; and it is confidently believed that a superior jack to any now existing, for American breeding purposes, might thus be produced. In the islands of Majorca and Minorca, to which the ravages of foreign and civil war have not so far extended, it is well ascertained that the large, coarse, slouch-eared Spanish breed still exists in perfection; and thence it would be easy to procure jennies—as the females of the ass are technically termed—by breeding which to the finest Maltese jacks, there can be no doubt that stallions might be reared superior in the combination of bone with beauty and spirit to any breed of original jacks now in existence. The choice of mares from which to breed mules by such jacks is an easy matter. They should on no account be blood

mares, or highly-bred mares, or tall mares. Fifteen hands in height is abundant stature, and fifteen two is too large, but they should be rather long-bodied, roomy, and, above all, bony. They should have long shoulders, as oblique as possible, since those of the ass are very straight, a peculiarity which it is desirable to correct; and, for analogous reasons, they should *not* have the pasterns too stiff and erect; and they *should* have the large, round and well opened. The better their necks, withers and heads, the nearer in all probability will be the produce. On the whole, we have little doubt that fine, well-selected Canadian or Norman mares will prove to be the best mule mothers, as thorough breeds will prove to be the worst, while Andalusian jacks are half breeds, between the Maltese and great Majorca race of asses, will prove the best possible sires. It only remains to be stated that, in order to have mules docile and gentle, they should be handled as young as possible, and invariably gelded before they are six months old. The longer that operation is deferred, the more indocile, obstinate and perhaps vicious they will become, which is the greatest defect in the character of the mule, and that against which it behooves the breeder most to be on his guard.—*N. Y. Tribune.*

The Loves of the Birds.

Poets have sung the loves of men and angels, but they have never been known to sing of the loves of birds. They have been very negligent in this respect. The loves of the birds would form as fruitful a theme as those of the poets themselves. In their attachments, they are generally faithful and affectionate—and it must be confessed they are, like men, a little jealous sometimes. Audubon gives a beautiful description of the loves of the humming birds. He says that in their courtship, the male, dancing airily upon the wing, swells his plumage and throat, and whirls lightly around the female; then diving towards a flower, he returns with loaded bill, which he proffers to her. He seems full of ecstasy when his caresses are kindly received. His little wings fan her as they fan the flowers, and he transfers to her bill the insect and the honey with which he has procured. If his addresses are received with favor, his courage and care are redoubled. He dares even to chase the tyrant fly-catcher, and hurries the blue bird and martin to their nests; and then, on sounding pinions, he joyously returns to his lovely mate. Who would not be a humming bird? Audubon says:

“Could you, kind reader, cast a momentary glance at the nest of a humming bird, and see, as I have, the newly hatched pair of young, little larger than bumble-bees, naked, blind, and so feeble as scarcely to be able to raise their little bills to receive food from their parents, full of anxiety and fear, passing and re-passing within a few inches of your face, alighting on a twig not more than a yard from your body, awaiting the result of your unwelcome visit in a state of the utmost despair—you could not fail to be impressed with the deepest pangs which parental affection feels on the unexpected death of a cherished child. Then how pleasing is it, on your leaving the spot, to see the returning hope of the parents, when, after examining the nest, they find their nurslings untouched!”

We have remarked above that birds, as well as men, are sometimes jealous in love. An exception, however, may be found to this general rule in the golden-winged woodpecker, a frequent and well known inhabitant of our American forests. Among the bright beaux and belles of this interesting tribe, no jealousies seem to exist, and no quarrels ever occur. Cheerily they hop through life, attended by the good wishes of all their acquaintances, and of each other. No sooner does spring call them to the pleasant duty of selecting mates and pairing off, than their voices may be heard from the tops of high, decayed trees, proclaiming with delight the opening of the welcome season. Their note at this period is merriment itself, and when heard at a little distance, resembles a prolonged and jovial laugh. These golden-winged woodpeckers are the darlings of Audubon. In describing their manner of mating, he says that several males surround a female, and to prove the truth and earnestness of their love, bow their heads, spread their tails and move sideways, backwards and forwards, performing such antics as would induce any one witnessing them, to join his laugh to theirs. The female joyfully flies to another tree, where she is closely followed by her suitors, and where again the same ceremonies are gone through with until a marked preference is indicated for some individual.

In this way, all the golden-winged woodpeckers are soon happily mated, and each pair proceeds to excavate a hole in a tree for a nest. They work alternately, with industry and apparent pleasure. When the nest is finished, they caress each other on the tree top, rattle their bills against the dead branches, chase their cousins, the red-head, defy the purple grackles to enter their nest, and feed plentifully on ants, beetles and larvæ. By and by the female lays four or six eggs, the whiteness and transparency of which are doubtless the delight of her heart. These woodpeckers raise a numerous progeny, having two broods every season.

The loves of the turtle dove and mocking-bird are graphically described by Audubon, as are also those of the wild-turkey, who is said to be even more ridiculous in his motions, and more absurd in his demonstrations of affection than is our common tame gander. The curious evolutions in the air of the great horned owl, or his motions when he has alighted near his beloved, Audubon confesses himself unable to describe. He says the bowings and snapplings of his bill are extremely ludicrous; and no sooner is the female assured that the attentions paid her by her lover are the result of sincere affection, than she joins in the motions of her future mate.

So much for the loves of birds. In many respects they resemble those of men. We have among us in society, our humming bird lovers, our golden-winged woodpeckers, our turtle doves, our turkeys, and ganders; and occasionally we find a pair who remind us of horned owls.—*Boston Journal*.

The Flight of Birds.

The nephew of Dr. Jenner, when on board a vessel going in a direct course for Newfoundland, and more than one hundred leagues from any land, saw a brown owl gliding over the ocean with as much apparent ease as when seeking for a mouse over its own native fields. The William Thompson, of Belfast, in his *Natural History of Ireland*, records, vol. i., page 102, from the log book kept on board the *John and Robert*, of five hundred tons, Captain McKeehnie, from Quebec to the port of Belfast, that from thirty to forty snowy owls, on the 16th of November, 1838, were seen when the vessel was 250 miles from the Straits of Belleisle. Several followed the ship; from fifty to sixty were seen on the 18th, some alighting on the rigging and yards; three were caught and taken to Belfast alive. The last of those seen at sea was on the 20th of November; the vessel then near 700 miles from Belleisle, and sailing along in latitude 54°, or nearly so. The Rev. Robert Holdsworth wrote me word that a water-rail alighted on the arm of a man-of-war, about 500 miles to the westward of Cape Clear, and at the same distance from any known land. An officer of the ship caught it, and carried it with him to Lisbon, feeding it with bits of raw meat. In a day or two it became perfectly tame, and would eat out of his hand. By the kindness of two officers of the Royal 42d Highlanders, stationed at Bermuda, I received the skin of a land-rail shot there. This bird is not found in the New World, and could only have reached Bermuda under the influence of a strong Northeast wind and thus saved its life, for a time, by making that island. With respect to Sir Ross's pigeons, as far as I can recollect, he dispatched a young pair on the 6th or 7th of October, 1850, from Assistant Bay, a little to the west of Well-

ton Sound, and on the 13th of October, a pigeon made its appearance at the dovecot in Ayrshire, from whence Sir Sohn had the two pairs of pigeons which he took out. The distance between the two places is about 2000 miles. The dovecot was under repair at this time, and the pigeons belonging to it had been removed; but the servants of the house were struck with the appearance and motions of this stranger. After a short stay, it went to a pigeon house of a neighboring proprietor, where it was caught and sent back to the lady who originally owned it. She at once recognized it as one of those she had given to Sir John Ross, but to put the matter to the test, it was carried into the pigeon house, when, out of many niches, it went directly to the one in which it had been hatched. No doubt remained in the mind of the lady of the identity of the bird.—*Yarrell's Birds*.

How to Make a Sound Shingle Roof.

As I have something to do with the carpenter trade, I thought I would give some of my ideas about that kind of work. I have often noticed the roofs of buildings that had some holes through them. The question occurred to me to find out what the reason was that a hole should come in one place and not in another, and on examination, I found the fault to be in the laying of the shingles; and that nine-tenths of the mechanics make the same mistake in laying shingles. I presume that some of my friends will think I am a little green to think of teaching them how to do as simple a piece of work as to lay a shingle, but perhaps I shall give them a new idea. I now ask any of them to examine their roofs, and see if they cannot find some of the very places that I shall describe. I shall commence to describe the bad places by taking four courses and numbering them. No. 1 is five shingles long. The first and last shingle of the course are four inches wide; the three middle shingles are 8 inches wide. This will form the first course. The next is four shingles, eight inches wide. These cover the same length and make No. 2. No. 3 is the same as No. 1, and No. 4 as No. 2. Now, many at the first sight will say we have a good roof, and the joints well broken. But let us examine a little and see. The second course in the joint of the third course is but one thickness of a shingle through to the roof-board, (and that too, at the second space of the shingle, as a shingle is usually divided into three spaces,) and in process of time the shingle will wear through and leave a hole through the roof, while the rest of the roof is good. I am aware that shingles are of various widths, and do not come all in the form that I have shown; but I take this way to show how to find the bad places. I shall now give my rule for laying shingles, and how to avoid such bad places in a roof, for they occur in most of

roofs if the workmen do not know how to avoid them. You must be careful not to make joint directly over the joint of the second course below the one you are laying; or, in other words, to break joints with the two last courses that you have laid.—*Michigan Farmer.*

Cure of Itch in Half an Hour.

Dr. E. Smith, at a meeting of the London Medical Society, called attention to an article in the *Gazette Hebdomadaire*, by Dr. Bourguignon, in which is a confirmation of the value of the treatment of itch, in Belgium, by sulphur, combined with lime, in a liquid form. The remedy is prepared by boiling one part of quick lime with two parts of sublimed sulphur, in ten parts of water, until the two former are perfectly united. During the boiling it must be constantly stirred with a piece of wood, and, when the sulphur and lime have combined, the fluid is to be decanted and kept in a well stoppered bottle. A pint of the liquid is sufficient for the cure of several cases. It is sufficient to wash the body well with warm water, and then to rub the liquid into the skin for half an hour. As the fluid evaporates, a layer of sulphur is left upon the skin. During the half hour the acarus is killed, and the patient is cured. It is only needful then to wash the body well and to use clean clothes. In Belgium, the treatment is introduced by first rubbing the body for half an hour with black soap; but this does not appear to be necessary. The only essential act is that of the careful application of the fluid sulphur. The lime is of no importance in the treatment, except to render the sulphur soluble, and such would probably be the case if potash or soda were employed, which is an improvement upon the mode of application of sulphur in substance with lard, as the more ready absorption of the remedy, and consequently the more certain and quick destruction of the insect, by using sulphur in a fluid form. In so disgusting a disease, it must be of great moment to be able to cure it in half an hour.—*Dublin, Med. Press, from Association Med. Jour.*

This might prove very useful in the treatment of skin diseases occurring among horses. Who will try it?—*Canadian Agriculturist.*

And among hogs, too.—*Ed. So. Planter.*

The Sheep-Shearing Machine.

Most of our readers have probably heard something in regard to this machine, though it is very likely that the account of it has been received with some incredulity. That the shearing of sheep can be successfully done, by machinery, is an achievement which affords another evidence that this is an inventive age. We saw this machine in operation at the late show of the N. Y. State Agricultural Society. It was used to cut the wool from a dried skin, the skin having been first moistened, so that

it could be pressed over a block in such a way as to present a smooth surface. The apparatus is a box, about the size and something of the shape of a common brick. It is fastened to the arm of the shearer, who works the cutting part by moving a lever with his hand, so as to produce a rapid oscillating motion of the knives. The knives are shielded by guards similar in principle to those which are used for mowing machines, and although they can be made to cut very close, it is impossible for them to cut the skin. The machine seemed to work more rapidly than shears ordinarily do, and the wool was cut very evenly—the staple never being cut more than once. The inventor stated that he had sheared a sheep in twelve minutes, but he did not tell the weight of the fleece, and we are without any means of accurately comparing this mode with the ordinary way of shearing, as to dispatch. The name of the inventor is P. Lancaster, of Burr-oak, St. Joseph's county, Michigan. The machine is made by Alexander Allen, of Rochester, N. Y. The price is \$10.—*Boston Cult.*

Window Gardening.

Parlor Plants.—The greatest difficulty in the management of plants in dwellings, is the absence of sufficient moisture in the atmosphere; uniformity of temperature may also be mentioned, and want of fresh air. Large foliated plants are the least satisfactory. The cactus family are well adapted, so far as constitution,—but they have little to recommend as floral ornament. The epiphyllums and cereus sections, it is true, have magnificent flowers, but the greater proportion of mamillaria, opuntia, melocactus, are more curious in form than flower. Similar in habit and growth, are the various aloes. *A. nigra*, *A. humilis*, *A. variegata*, and *A. retusa*, may be mentioned as well adapted for this mode of cultivation. *Sompervirums* and *mesembryanthemums* require similar treatment, and some of them have beautiful flowers. These are eminently cleanly plants, requiring little water, and never making a mess with falling leaves and buds. The cyclamen are most desirable, as also the exalis; there are many beautiful species of both these tribes. The leaves should be kept clean, by syringing or sponging them individually. As a matter of cleanliness, saucers are set under the pots containing the plants; these should be emptied occasionally of water. Even plants that delight in moisture will not thrive, if it stagnates about their roots.

Prairie Farmer.

From the Scientific American.

The Chemist in the Laundry Washing.

Washing has for its object not only the removal from our clothing of accidental dirt, but also to carry away certain ammoniacal salts, the products of perspiration, which are absorbed from the body by all the clothes that we wear, especially those nearest to the skin. A change of under garment is essential to health on this very account, and the art of washing is more useful in removing the hardened perspiration from the cloth (to which it clings most pertinaciously, like the matter of contagion) than in removing the superfluous dirt which merely offend the eye. Until recently, the laundress's first operation was to prepare "a ley" of potash, which she did by putting wood ashes into a tub having a perforated bottom. The tub was then filled with water, which, trickling through, dissolved in its course the potash contained in all wood ashes. This process is still extant in some parts of the country, especially where wood is used for fuel.

The starting process of washing now is to prepare a ley of soda. Hard water requires more soda than soft; and, when rain water can be procured, alkali may be dispensed with entirely. The utility of soda or of potash in washing arises from the power these alkalies possess of uniting with grease of all kinds, forming a soap; and to disunite the ammonia of the perspiration from the clothes, thus purifying the fabric and rendering it capable of the like absorption when again worn. This important action has hitherto been unnoticed. Now, although we admit their great utility, we particularly caution all parties not to use too much of these powerful alkalies, because cotton fabrics are partially dissolved by a strong hot soda, potash, or lime ley. It is to this cause that the "bad colour" may be attributed, which the house-wife now and then justly complains of in the linen. When the outer coatings of the filament of the fabric are thus acted upon, they are quickly influenced by the air, and become of a yellow tint.

There is another cause of "bad colour," and that is an insufficient supply of water, or washing too many things in the same liquor. This gives rather a gray tint. The yellow colour is, however, the great thing to guard against, as this partakes of a permanent evil; and we mention it in particular, because there are strong washing fluids sold containing lime and soda. In nine laundries out of ten, too much soda is already used; we need not, therefore, desire to increase the evil.

Many laundresses, when they hear complaints of the colour of the articles they send home, will make their alkaline ley a little stronger next washing day, and thus unwittingly increase the evil. A judicious use of soda or pearl-ash is highly beneficial, and a

saving of labour; but, if in excess, is very injurious.

The strong lixivium, recently recommended for washing linen, has long been known to those who require to cleanse metals from impurities on the surface only. Printers, for instance, may use it with safety to cleanse the face of their type from the unctuous ink used in printing, because the ley is not strong enough to affect the metal. The very low priced soaps are by no means the cheapest in use; and they also impart an unpleasant odour to the linen, which cannot be got rid of.

The use of "blue" in rinse water is too well known to need comment further than to our purpose. The ordinary blue is a compound of Prussian blue and starch. The colour that it gives merely covers the yellow tint of the goods, without doing more. We would suggest the use of pure indigo instead of the common blue. This advice is founded upon practice as well as theory. Indigo, in this operation, is without any bad action on the fabric. Persons employed in the "indigo department" of the docks have the whitest linen of all people in London.

S. PRIESSE.

From the North Carolina Planter.

Papers of the North Carolina State Agricultural Society.

RALEIGH, Jan. 13, 1858.

A. M. GORMAN, Esq.:

Dear Sir.—I send you for publication in the first number of your Agricultural paper, the enclosed papers, submitted to the Executive Committee of the State Agricultural Society, at their late meeting, by Dr. Wm. R. Holt, of Davidson. Upon Lot No. 1, the premium of \$40 was awarded, and upon Lot No. 2, the premium of \$50. The Executive Committee were in session three days, and were occupied most of the time in examining the Essays on "Hill-side Ditching." There were four Essays on this important subject, and all were of so high a character that the Committee determined to delay the decision upon their merits until the next meeting, which will be held on Tuesday of Wake Superior Court, when it is hoped all the members will be present.

Very respectfully yours, &c.,

W. D. COOKE,
Sec. Ex. Com.

LOT No. 1.

LEXINGTON, Davidson Co., N. C. }
October, 1857. }

To the Executive Committee of the State Agricultural Society:

I submit a concise statement of the various particulars respecting the cultivation and product of the Lot No. 1, in Wheat, in 1857, sub.

mitted to the Executive Committee of the State Agricultural Society.

Lot No. 1—*At my Trentham Place.*—This Plantation was bought in 1828. The Lot named had been entirely exhausted, and had not been in cultivation for a few years, and constituted a part of a grazing Common, and would not have repaid for cultivation as it then was. It consisted of eight acres and thirty-six hundredths, and was set apart for a grazing lot, if it could be made to produce clover.

After cleansing the land of stones, which were put into underdrains in a low flat part of it, and grubbing up the sassafras, old peach trees, mulberry shrubs, persimmon bushes, &c., it was cultivated in corn and oats to cleanse it and test its remaining powers, with very poor returns. Eventually it was broken up seven inches deep and sowed in oats at the rate of two bushels per acre, and they turned under in the milk state the last of June, 1843. Lightly manured all over the next spring, and put in corn. The result, a good crop followed, with the next year a good crop of oats and stand of clover from spring seeding. The latter grazed until within a few years, since I have began the cultivation of wheat. The rotation has been an irregular one,—mainly wheat, corn, wheat, clover, clover.

The wheat crop now submitted, followed the last crop of clover in this rotation, and was grazed very close. In August the lot was coultured fifteen inches deep with three horses, ten inches apart in the furrows, and grazed in the mean time. Followed the last of August and first of September with three-horse turning ploughs, to the depth of eight inches—harrowed with heavy three-horse harrows. The fall season being very dry, and the following being across the coultur furrows, the ground broke up into very large clods, upon which the harrows could not have much effect. The Clodcrusher (made by R. Sinclair, Jr., of Baltimore) was then introduced and passed with much effect over the whole, and repeated over the cloddiest portions. On the first week of November the wheat and guano was sowed—two bushels and one-eighth of the former, and 250ths of the latter. Ploughed in with one-horse sharp shovel ploughs, harrowed, and then rolled with the Clodcrusher. The use of the harrow seemed most effective in tearing up and bringing to the surface the remaining clods, which were most beautifully reduced by the Clodcrusher. The field was brought into the most beautiful, fine and well pulverized condition, and left so until the 10th of last March, when it was sowed in grass seeds, viz: six quarts of clover seed and one bushel of orchard grass.

The wheat (white Etrurian) was cut on the 21st of June, with a three-horse reaper, (made by Obed Hussey, of Baltimore,) and was saved very clean. It could not have been cut with

grain-cradles, without great difficulty and loss. It stood very thick on the ground, and much of it five feet six inches in height.

The yield, forty-six bushels and sixty-four hundredths per acre—of 60 lbs. to the bushel.

This Lot, I omitted to mention, was frequently dressed, when in the clover part of the rotation, with leached ashes and Plaster of Paris, at the rate of ten bushels per acre of the former, to one bushel of the latter.

The soil, a deep, heavy, red clay loam. The natural growth on adjoining and similar lands red and white oak, gum, hickory, dogwood and wild grape vines. The largest yield heretofore on an adjoining lot, was thirty-five bushels per acre, without guano.

ESTIMATED COST OF LABOUR, SEEDS, MANURES, &c

Coultering, (3 horses,)	\$2 50	per acre
Ploughing, “	2 50	“ “
Harrowing, “	0 40	“ “
Cl'd Crush'g. Rol., (3 horses,)	0 40	“ “
Extra harrowing and clod-crushing,	0 10	“ “
Seed wheat 2½ bush. \$1 25,	2 65	“ “
Guano, 250 lbs. per acre,	7 50	“ “
Sowing wheat and guano,	0 20	“ “
Shovel ploughing,	0 75	“ “
Harrowing,	0 40	“ “
Clod crushing,	0 40	“ “
	<hr/>	
	\$17 80	

	BUSHEL.
Product,	46 64
At \$1 25,	11 66

\$58 30	—	\$58 30
Expenses	—	17 80

Nett proceeds, \$40 50

Exclusive of interest on land, and taxes.

The above Lot was broken up into an unparalleled rough and cloddy condition, and I determined to try the capabilities of my implements to bring it into a fine pulverulent state, to make, in my view, the guano pay, and to secure a good stand of grass for profitable grazing hereafter.

All of which is respectfully submitted,

W. R. HOLT.

LOT No. 2.

To the Executive Committee of the State Agricultural Society:

Statement of the Cultivation, Products, &c., of Lot No. 2, in wheat, during the year 1857.

Three-fourths of this Lot had been in the cultivation of cotton for thirty-five years successively, and for the last ten years had been manured with well rotted farm-yard manure every two or three years, and also every two or three alternate years dressed with leached ashes over the recent planted cotton seed, in

the drill and on the surface—the general product of cotton in the seed from eight to twelve hundred lbs.

In the spring of 1856 it was deeply ploughed, seven to eight inches, with three-horse ploughs, harrowed and planted in corn. During the last of October the corn was gathered, the cornstalks cut close to the ground, removed to the barn-yard, and wheat at the rate of two bushels of early Purple Straw was sown to the acre, with, at the same time, two hundred lbs. of Peruvian guano,—ploughed in with sharp shovel ploughs and thoroughly harrowed with three horse harrows, and cross-harrowed. The sowing of the wheat and guano was made the second week of November, and the land in the finest possible tilth.

The wheat was cut with a Hussey wheat reaper, and the yield on the 22.75 acres, 967½ measured bushels of early Purple Straw, weighing on Fairbank's balances sixty-five lbs. to the bushel. At sixty lbs. per bushel, the yield is 4.607 bushels per acre.

This Lot, No. 2, is at my Linwood Farm. The soil is naturally of the best quality of upland, and consists of a deep chocolate clay loam, lies very high and undulating, and is the north end of a field of forty acres, and was cut off from the field in a regular form, but was the best wheat in the field, as a portion of it the remaining was winter killed, from the blowing off the deep snow, and wetness of a part of the field.

ESTIMATED COST OF LABOUR, SEED, MANURE, &c.

Listing off into 18 cutlands			
with 2 horses,	\$0 15	per acre.	
Sowing wheat and guano,	0 20	" "	
Shovel ploughing,	0 75	" "	
Harrowing and cross-har-			
rowing, 3 horses,	0 80	" "	
Seed wheat,	2 65	" "	
Peruv. guano, 200 lbs.,	6 00	" "	
	<u>\$10 55</u>		

BUSHEL.

Product	46 07	per acre.
At \$1 25,	11 51½	
	<u>57 58½</u>	—\$57 58½
	Exp.	10 55
		<u>\$47 03½</u>

Nett product, exclusive of interest on land, and taxes.

The charges for the labour of cultivation above made may be considered by some too liberal, but from great experience I consider them about right.

All of which is respectfully submitted by
W. R. HOLT.

NORTH CAROLINA, }
Davidson County. }

I, Azariah Williams, County Surveyor for

Davidson county, being sworn, declare that I have carefully surveyed and measured the following Lots of land for Dr. William R. Holt, of Davidson county, and the measurement is correct.

Viz: Lot No. 1.—At his Trentham Place, near Lexington, from which a crop of wheat has been taken the present year, measured eight acres and sixty-three hundredths, (8 .63 acres.)

Lot No. 2.—At Linwood, his Jersey Plantation, from which also a crop of wheat has been taken the present year, measured twenty-two acres and seventy-five hundredths, (22 .75 acres.)

AZARIAH WILLIAMS.

Sworn to and subscribed before me, an acting Justice of the Peace for Davidson county, on the 16th of October, A. D., 1857.

C. L. PAYNE, J. P.

NORTH CAROLINA, }
Davidson County, }

I, William R. Holt, of Lexington, Davidson county, being sworn, say that I took proper care to have the wheat grown on the within Lots, Nos. 1 and 2, measured by Mr. Williams, the Surveyor, and that I believe the measurement of the wheat, as it was measured and tallied in the presence of myself and son, one or the other during the time, to be correct—as follows:

Lot No. 1, at my Trentham Place, consisting of eight acres and sixty-three hundredths, measured full measure, three hundred and sixty-eight bushels (368 bushels) of White Etrurian Wheat, weighing 64 lbs. to the bushel, and at the rate per acre 60 lbs. to the bushel of forty-six bushels and sixty-four hundredths, (46 .64 bushels per acre.) (Measured in a sealed half-bushel.)

Lot No. 2, at Linwood, my Jersey Plantation, consisting of twenty-two acres and seventy-five hundredths, measured under the same circumstances, nine hundred and sixty-seven and a half bushels of early Purple Straw Wheat, viz: (967 .05 bushels of sixty-five lbs. to the measured bushel.) At sixty lbs. to the bushel the measurement to the acre would be forty-six bushels and seven hundredths per acre, viz: (46 .07 bushels per acre.)

The above I believe to be correct and true, —(measured in a sealed half-bushel.)

W. R. HOLT.

Sworn to and subscribed before me, an acting Justice of the Peace for Davidson county, on this the 16th of October, A. D., 1857.

C. L. PAYNE, J. P.

NORTH CAROLINA, }
Davidson County, }

I, James M. Holt, witnessed the tallying and measurement of the aforesaid wheat from the Lots named in the foregoing paper, and being sworn, say that I believe the measure-

ment to be correct, as care was taken to have it so.

JAMES M. HOLT.

Sworn to and subscribed before me, an acting Justice of the Peace for Davidson county, October 15th, 1857.

C. L. PAYNE, J. P.

Application of Fertilizers.

HALIFAX COUNTY, N. C.

About three years ago, I sowed, in the latter part of July, on a very poor spot of worn out land, some guano, at the rate of about 200 pounds to an acre, ploughing it under, and then sowing and harrowing in some buckwheat and rye, and afterwards clover seed. Whenever the clover came up, I strewed thereon plaster, or gypsum, at the rate of a bushel and a half to the acre. The buckwheat I cut two months after sowing, and the rye in about eleven months. The result was, that each of the three crops was good, all having been sown at one time and on the same ground. A portion of the ground before manuring was too poor to produce a crop of any kind.

Hence it may be inferred that the success of the experiment was owing entirely to the gypsum and the guano.

Encouraged from the above named experiment, I next tried guano for wheat, on a comparatively poor soil, at the rate of 200 pounds per acre. During the growth of the crop, there was a striking difference in its appearance in favor of the parts where the guano had been applied and the yield, by actual measurement, had increased four-fold, on the clover seed: after which I rolled the ground. As soon as the clover came up, I sowed the field with plaster, at the rate of a bushel and a half to an acre. The result was, that the clover on the part of the field where no guano had been applied was inferior, while the guanoed portion, like that in wheat, was about four times as good.

These experiments have convinced me that the effect of guano as a renovator of the soil, is as enduring as other measures, and does not expend itself in one season, as has been heretofore supposed.

In the spring of 1852, I instituted a comparative experiment with four fertilizers, namely: guano, bone-dust, wood ashes and clover ley. A parcel of ground was selected which had been cropped with clover three consecutive years. After the first ploughing, I ran two deep furrows, with an opening of drill-plough, seven feet apart, over the clover-ley, and similar furrows over the adjoining ground, which was a part of a poor old broom-sedge field that had also been previously broken up. In the two furrows next to these on the clover-ley, after filling them with earth nearly level with the surface, I applied bone-dust, mixed with loam, in the proportions of four-fifths loam to one-

fifth bone-dust, at the rate of a bushel of this mixture to every 450 lineal feet. At the bottom of the next two furrows or drills on the clover-ley, I applied leached ashes, at the rate of about one bushel to 150 lineal feet, and next continuing throughout the clover-ley, I strewed guano at the rate of two quarts and a pint, mixed with one fourth part of plaster to every 450 lineal feet. At the bottom of the next two furrows or drills on the clover-ley, I applied leached ashes at the rate of about one bushel to every 450 lineal feet; and next, continuing throughout the clover-ley, I strewed guano at the rate of two quarts and a pint, mixed with one-fourth part of plaster to every 450 feet of earth at the bottom of the deep furrows or drills, in order that it might not come in direct contact with the seed corn when planted, and thereby kill the germ. Next, a bull-tongue plough was run on each side of the drills, forming another set of drills or hollows, in which I planted "Ward corn," in single kernels, a foot and a half apart. At harvest time, I found that the crop where the bone-dust and guano had been applied was good, nearly equal in product, averaging about three ears to each stalk, and yielding, by estimate, about 60 barrels, or 300 bushels to the acre; but on the part where the leached ashes were applied, the yield was quite inferior.

I will give one more experiment with fertilizers, which, from its peculiarity, may be regarded with some interest. Last winter it was proposed that as many members of the North Carolina State Agricultural Society as might feel inclined, should deposit in one common fund \$5 each, to be awarded in three gradual prizes—first, second and third—(after reserving for the use of the society 15 per cent.) to those of the number who should produce the largest yield of corn on an acre of land, which, in an unimproved condition, does not yield more than three barrels or 15 bushels—to be selected and determined by disinterested judges. Each member was to have the privilege of resorting to his own mode of cultivation.

The ground selected for my experiment, in an unmanured state, it was judged, would not have produced more than 2½ barrels, or 12½ bushels; but by the aid of guano, plaster, super-phosphate of lime, and Chappell's fertilizer, connected with a slight dressing of manure from the barn-yard, and stable dung, I produced 14½ barrels or 73½ bushels of corn, valued at \$62 50, and this at a cost of \$20 for fertilizers and their application, to say nothing of the fodder derived from the stalks, blades and shucks, and the increased fertility of the land, from which I made a good crop of wheat and clover without additional manure.

[North Carolina Planter.]

*For the Planter.***Proper Mode of Gearing Horses.**

AMELIA, 5 Feb'y 1858.

Editor Southern Planter:

Sir—I notice an article in your paper for January, from "Observer," on the proper mode of gearing horses, which does not exactly coincide with my experience. For three years past I have been engaged in superintending a large farm upon James River, where all the fall plowing was done with four-horse plows. The overseer I found geared his team in the usual mode, two and two. A few days observation showed me conclusively that this mode of gearing was liable to several objections.—In the first place, the front team evidently did not support a fair share of the labor; and in the second, being geared from the back, they controlled the plow, and consequently when passing over undulating ground required all the weight and strength of the plowman thrown upon the handles to prevent his plow from being "set" beyond its capacity. After carefully watching the operation for some hours I determined to alter the gearing, and, if possible, remedy these defects. I took one of the plows (Watt & Co.) to the shop, bored a half inch hole through the beam immediately over the point, through which I put an iron hook with a nut. The hook should touch the beam when screwed up. I then brought the fifth chain back from the buck and attached it to this hook, thus gearing the front team to the beam immediately over the point. What was the result—my plowman says he can work a double plow so geared with as much ease as he can a single one, or at all events, instead of needing a good hand to drive any boy old enough to crack a whip answers as a driver. By making the hook from 6 to 8 inches long, you raise or lower it as you may desire. The difference in the draught I consider nearly equal to one horse, if you take into consideration the difference in amount of labor performed by the rear and front team. I think "Observer" is wrong in supposing that because his illustration of the car answers his position satisfactorily, that when the same principle of draught is applied to the plow the same result will obtain.

In applying power to the car there is but one line of draught upon a perfectly

smooth surface, whereas with the plow there are two lines of draught and the surface undulating—often sufficient to make a difference of a foot or more between the level of the leaders and the plowman.

Will you, Mr. Editor, explain what "Observer" means by hitching a horse in a straight line from the hames. Does he propose to run the traces parallel to the earth from the hame to the swingle-tree? if he does, where would he attach the swingle-tree to a wagon, and how to a plow?

I notice in the same paper an article copied from the "*Journal of Agriculture*" on Guano, in which it is stated that lands long cultivated in the same grain crop by the assistance of guano after a while cease to be productive except by largely increased applications of the stimulant. This certainly does not accord with the experience of two of my former neighbors. One has had a field in wheat for about 10 consecutive years, and the other for about 8. In each case the land has improved steadily—the last crop being the best yet harvested. How far this result may have been produced by restoring to the land the straw instead of selling it to dairy farms I cannot say, but that the land has improved there is no possible doubt. I shall adopt the same system myself, and after giving it a fair trial, will let you know the result. My plan is to run a rake over my harvest field and turn in the volunteer crop and then drill with guano. Upon my corn and oat land I put all my straw and manure; on my tobacco, guano. Having 200 acres cleared, I divide it 110 wheat—40 corn—25 oats—and 10 tobacco. The corn, oats and tobacco being followed by wheat every year.

Yours, P.

*For the Southern Planter.***Geldings vs. Brood Mares for Farm Work.**

"Northwestern Farmer," in the February No. of this paper, advocates the use of Mares on farms in the place of Geldings. About this we differ from him entirely; that is, if, as he proposes, the mare is to be used as a breeder, whilst she is one of the team. He had as well recommend cows in the place of oxen, or women in the place of men, as farm laborers. No female has the same amount of muscle, or fixedness of frame, which is essential to power and labor, as a male; particularly whilst breeding. They then become matronly, their systems are swollen. Their veins are tight. The

cellular membrane is inflamed, and in all respects they are not suited to *real* labor. A man who keeps a team of mares (exclusively) to work and to breed at the same time, has neither a set of brood mares, nor a work team; moreover, the colts of mares which are *worked* whilst breeding, and then whilst nursing, are never so good. In the first place, the compression and jar of labor, especially towards the latter period of pregnancy, must prevent the foetus from expanding to a full and vigorous size. In the second place, whilst the mare is nursing the colt, if she labors, from the soft and relaxed state of her system, she becomes feverish, the milk is made unhealthy, and the colt is purged, and sometimes killed. Then again, traveling the colt after the dam, gives it too much exercise, which is apt to stint and injure it. Should you stop it up, again it frets and worries, more than when following the dam. One good brood mare, kept as a brood mare, will pay as much as three worked as the "Northwestern Farmer" recommends. His system may answer, in part, where the master himself is a laborer, and is constantly with his team, and in a grass country and cool climate; but with us it won't pay. To put a brood mare down here, in a farm team, is to take leave of her. What between the overseer, negroes, summer fallowing, and marl hauling, she *can't* breed. Even when we do work them, that is, as one of the farm team, before we can obtain a good colt, the mare must be recruited, when she will breed as well as ever. But breeding and working must be during different years. Don't understand by this, that a mare whilst breeding, in the early stage, is not to be used, they may be, and are, but so gently that the work does not injure them; such as a light wagon, or to an easy running plow, when the land is in good tilth, so that there may be no jerks. A mare not breeding, is more difficult to keep in order than a gelding, from their horsing propensities which weakens them, and is almost sure to make them kick and bite. Two very unpleasant accomplishments for a work animal. A gelding, because he is a gelding, approaches an animal machine; work is his only element; all the secretions of his system go to his muscles—there is nothing else left. Hence the gentlest of all animals is a gelding, he has no excitant, and if kindly driven, is capable of more labor than any animal which is alternately excited and weakened by its generative system.

Again, the argument is brought, that an old gelding is valueless—an old mare valuable—on account of her breeding capacity. Here, too, we must differ. A mare too old to work, is too old to be used as a breeder. Life is ebbing—she can't impart to the foetus the vitality it should have, nor can she nurse the foal. Her milk is too poor, and too little in quantity—the colts of old mares are shortlived, and generally betray about the head some signs of premature

age. With an injured mare the case is different, and there we agree with the "Northwestern Farmer," the mare has an advantage over the gelding. Although, as a general rule, if you wish to secure a first rate colt, dam and sire had best be young; or in mature life, and both perfectly sound; moreover, a brood mare will bring much finer colts to be put every alternate year, than every year. For this reason, whilst a mare is nursing one colt, if she is put to the horse, her system has the double drain of an embryo and foetus inside, and a sucking colt outside; which commonly acts to the injury of the foetus, and always weakens the mare. We suggest to farmers to keep no more mares than will keep them in horses—for family use—say one fine mare, or two at most, as *breeders*, and work your farms with mules and oxen. In raising colts, of course you are apt to have as many fillies as horses; in that case, if you keep the fillies, keep them distinct from the brood mares until wanted as such.

TIDEWATER FARMER.

For the Southern Planter.

Graining and Grazing Cattle.

RICHMOND, Feb. 26th, 1858.

Dear Sir:—

The February number of the "Planter" contains a communication from Mr. Thomas Marshall, Secretary of the Piedmont Fauquier Agricultural Club, showing that the nett profits made by Mr. Nathan Loughborough, of Fauquier county, on forty head of cattle, grazed by him in 1857, were equal to about \$27 per head, and inquiring whether "any Agricultural county in Virginia can beat this?"

Happening to have in my possession memoranda made in reference to some cattle grazed in 1854, by my neighbour, Col. Robert L. Wright, of Wheatland, Loudoun County, I feel sufficiently armed to take up the glove thrown by Mr. Marshall.

On the 28th of Nov., 1853, Col. Wright purchased 47 head of cattle, averaging in weight 1038½ pounds at \$31.92 per head.

On the 1st day of July, 1854, their average weight was 1370 pounds, having gained in seven months and two days 331½ pounds each, and were sold on that day at \$67.28½ per head, being a gross profit of \$35.36½ per caput.

During the winter of 1853-4 these cattle were fed upon straw and fodder, and about one and a half barrels of corn to each. The corn was fed, unshucked, with the fodder, and the quantity was ascertained, by measuring the yield of one or two shocks of corn in the field.

Estimating the value of the corn at \$4 per head, and that of the long food at \$3.21, (the estimate of Mr. Marshall); the nett profits were \$28.15½ per head on cattle costing \$2.96 per head less than those of Mr. Loughborough.

Whilst these profits may be considered large, and indeed are larger than those which have been received by the grazers of Loudoun for the last five or six consecutive years, yet I do not believe that they very far exceed the *average* profits made by them in the year 1857. I do not mean to assert that the profits *per head* have been so large, for the reason that the greater number of the cattle grazed by us are of less size than those referred to, not averaging perhaps over 750 or 800 pounds when purchased, but the *per centage* realized in 1857 on the capital invested in cattle has fallen but little short of 100.

I will mention a single case, out of many, which I could enumerate.

A gentleman residing in the neighbourhood of Col. Wright, in November, 1856, purchased 60 head of cattle, at an average cost of \$17.54 per head. Of these 30 were sold in August, 1857, at \$38 per head, and 30 in September, at \$36; average profits \$18.46 per head, equal to upwards of 110 per cent on the capital invested.

To these cattle *no corn* was fed.

Respectfully,

Your Ob't Servant,

NOBLE S. DRADEN.

Raising Hogs.

FAUQUIER COUNTY VA., }
Feb. 25th, 1858. }

To the Editor of the Southern Planter:

In the February number of the Planter is an article entitled "Raising Hogs," over the initials W. L., which recommends spirits of turpentine as a medicine for hogs. He says:

"I commenced giving my hogs a common tea spoonful to every hog that was weaned from the mother." But does not say how often, or at what season the dose should be given.

If Mr. W. L., or some other gentleman, will inform me on this subject I will be much obliged to him.

J. W. C.

Fine Sheep.

We have seen account of sale of 30 sheep, sold on 22nd January, by Shook and Crockett, Richmond, for Dr. John R. Woods, of this County. These sheep averaged between 164 and 165 pounds, gross weight, and were sold at \$7 per hundred, gross, thus bringing the handsome sum of \$11½ per head. The lot consisted of old ewes and watchers, under two years old, and but for the condition of money matters, and the heavy decline in the meat market, the salesmen were confident they would have realized a higher figure for them, nothing but their superior size and quality sold them for such a price at present. With such results as the

above, our farmers will be relieved of the necessity of sending elsewhere, perhaps to some of our Northern brethren, for the best sheep to improve their flocks. Dr. Woods selects none but the best to dispose of as breeders, and sells them at prices not unreasonable, considering their quality.

Char. Advocate.

Best Age for Transplanting Fruit Trees.

At a recent meeting of the "Fruit Grower's Association of Western New York," one of the questions propounded, was

"*What age is best for planting Apple and Pear trees from Nurseries to Orchards, to insure success?*"

The members present proceeded to discuss this question as follows:

T. C. Maxwell said that when he commenced the nursery business, having no extra sized apple trees (as they were at that time in great demand,) he procured some, and they were planted in his neighborhood, with the small ones from his own nursery. The result was such as to convince himself and his customers that it was folly to plant large trees.

C. P. Bissel, of Rochester, five years since, at a good deal of trouble and expense, removed some large cherry trees to his grounds, and was so successful that he had been induced to try others, but had given it up as a bad job, and hereafter all he would seek would be a young healthy tree.

Mr. Berckmans said the French rule was, that a tree should make all its wood on the spot where it grows, and hence a tree is generally cut down to the ground after transplanting. When Mr. B. came to this country, he brought a ship load of pear trees, the best of his own and Van Mons' collections. The wood was injured on voyage, and on transplanting he cut down to the sound wood, many to the ground. Those that were apparently uninjured were planted without much cutting; but they lingered for years and most of them finally died. Those that he cut down are now beautiful pyramids, requiring no care, and producing beautiful crops.

Mr. Fish once sold a collection of trees to a lady in Pennsylvania. While delayed at Corning, the mice got into the bundle

and gnawed the bark off several of the trees, some six inches above the roots.—He cut them down and made the lady a present of them. The present year, being in the neighborhood, he called to see the trees, and those that had been cut down were the finest of the lot.

Mr. Ainsworth said that when he commenced the nursery business he could not persuade people to buy his small trees.—One of his neighbors went on a journey with his team in search of “fine, large” trees, and returned heavily laden with about fifty apple trees. In two years after there was hardly a tree living. He then bought small trees, and now has a fine young orchard. Nine years ago, two of his neighbors, one Mr. Wilbur, and the other being unsuccessful he would not name, determined to plant cherry trees.—Mr. W. sent to Elwanger & Barrys, and bought two years old trees, planted them, and they are now as beautiful trees, as man ever looked upon. The other, on seeing the trees, made up his mind that he would find better trees than that, and succeeded in finding some big ones two or three inches through. They are alive now, but little larger than when first planted. The philosophy of the thing is this: when a large tree is taken up, so many of the roots are broken off that the tree starves before new roots are formed to furnish its sustenance.

Mr. Barry was glad to hear this question discussed. No doubt thousands of trees are destroyed by being removed too large. A young tree is checked but little by removal, and soon commences its growth. It would be well to be definite in our discussions. The question was: *What age is the best?* For the Pear, Cherry and Plum, two years was old enough, *if persons wished a model orchard, trees of one year old would be better.*

These are the opinions of some of the most intelligent and experienced Fruit Growers in America, and should be considered *conclusive*. They have more force and significance in the South than at the North, where young trees are of much slower growth. The passion for “big trees,” and the neglect of trees (big and little) after planting, are among the principal causes of the failures and disappointments which often attend amateur efforts at orcharding.



THE SOUTHERN PLANTER.

RICHMOND, VIRGINIA.

Excusatory.

A protracted trip to Maryland, and as far North as New Haven,—taken for the purpose of investigating the composition of certain phosphates, and the value of the phosphates generally, applied to crops singly and in combination with Peruvian or other ammoniacal guanoes, has left us no time for editorial this month. In fact we did not return until the paper ought to have been in press. We are glad, however, that the number and variety of communications, some seventeen in number, with which our friends have favoured us, more than compensates for any lack of editorial, and that the nature of the business which called and detained us so long will excuse the late appearance of the paper.

We are not yet prepared to present the result of our inquiries and investigations, but hope to do so in the course of the next month.

An Important Amendment in the Law of Enclosures.

In another part of this paper will be found a communication from a gentleman of King William County, calling upon us to agitate the question of altering the fence law, and to elicit the views of others in the same matter. In compliance with his request, we publish a document on that subject, presented by the Executive Committee of the Virginia State Agricultural Society to the Farmers' Assembly, which will be found well worthy of perusal.

The recommendation contained, under the second head of the REPORT, in reference to legalizing associations of farmers occupying contiguous lands, has been acted on in one case; and the farmers of the three associations in Prince George, which the REPORT alludes to, now enjoy by law the benefit they had initiated

for themselves by their individual action. We regard this as one of the most important acts for the benefit of the Agricultural class which has been passed for a good while: and, in order that all who wish to obtain a similar benefit for themselves may be enabled to do so, we append the law itself, so that at the next session of the Legislature, petitions for that object may be presented. We presume there is no doubt that they will be granted in all cases; and to grant them in any neighbourhood, is to ensure their extension over the whole district in which it may lie, and even into contiguous counties where a considerable water course shall not intervene.

If the Legislature, in addition to this, will only pass a law for the improvement of stock, which shall put rams, boars and bulls on the footing of stallions, and prohibit their running at large, we shall be in a fair way to get rid of the fence law in a mode to which no other interest can take exception, and which will demonstrate its propriety by its gradual working:

AN ACT to Authorize Voluntary Associations of Individuals for Fencing their Lands in Common.

[Passed January 19, 1858.]

§ 1. *Be it enacted by the General Assembly,* That the owners and occupants of lands on the south side of James River, in the county of Prince George, included in the following boundary lines, to wit: Beginning on the shore and at the margin of James River, and at the west side of the mouth of Powell's Creek, thence up that creek to the land of William H. Figg on the eastern side of said creek, thence along the outer or inland boundary line of said Figg, (and including his and all the other named lands within the designed area,) and thence in succession along the outer boundary lines of the lands belonging to the estate of William J. Dupuy, deceased, of James B. Cocke, of Nathaniel C. Cocke, of Edmund Ruffin, (occupied by Charles L. Ruffin,) of Robert Adams, of Thomas Adams, of William T. Adams, of Peter C. Marks, of John A. Marks, of Edward A. Marks, of John Smith, of Lucy J. Smith, of James E. Moore, of the estate of L. Wallazz, deceased, of James Anderson, of William Tench, of Julian C. Ruffin, of Henry Brockwell, of Henry Harrison, of William M. Watkins, of William Bland, of Harrison H. Cocke, of George Wilkins, of Susan Wilkins, of Peter Birchett, senior, of Daniel Epes and Peter Epes, to Bailey's Creek, thence down that creek to James River, and along the margin of James River to the beginning at the mouth of Powell's Creek, need not keep up any fence on the boundary lines running through

or across said lands, and that such lines shall be deemed a lawful fence: *Provided,* That it shall be the duty of said owners and occupants to keep up a lawful fence along all the outer land boundary line, around the lands within the above mentioned bounds, and also along all the outer water boundary lines except such as have previously been made lawful fences.

§ 2. *Be it further enacted,* That the like benefits, provisions and restrictions, as are stated in the foregoing section, for the lands within the boundaries therein named, shall be extended to another body of land in the county of Prince George, bounded by the following out-lines and limits, to wit: Beginning on the shore of James River below the town of City Point, where the land boundary line of said town reaches the river, thence running back along the said boundary line, and excluding the said town from the area designed to be included, to where the said boundary line reaches the river again above the said town, thence by the margin of James and Appomattox rivers, to the upper extremity of the land of John T. Bland, thence along this western boundary line to the outer boundary lines in succession, of Wm. D. Coke, James Temple, Frederick Temple, Samuel Watkins, John H. Batte, James Knox, John Tinsley, Edward Comer, and Christopher Proctor, to the beginning on the river shore.

§ 3. *Be it further enacted,* That whenever any person or persons owning one or more tracts of land outside of but adjoining any part of the lands designated in the foregoing section, or such other land as shall be subsequently and legally included therewith, shall desire to have the benefits above granted extended to such adjoining land, the said land shall be so included under the above provisions upon the owner or owners of such land first complying with the following conditions, to wit: To a copy of this act to be kept in the office of the clerk of the county court, shall be attached a general description of the boundary lines of the land for which the application is made, together with the following declaration of the owner or owners thereof, to be signed by his, her, or their names, and the signature or signatures acknowledged before and witnessed by the clerk, and which paper shall be filed in the office and made of record, and which declaration shall be in the following words, or of like purport and meaning, to wit: "I, (or we,) hereby declare my (or our) consent that my (or our) land situated and bounded as above described shall be included within the provisions of the above act of the General Assembly."

Whenever a public road may cross any part of the land now included, or which hereafter shall be included under the foregoing provisions, good and substantial gates may be erected across such public road or roads, as parts of the general enclosure: *Provided,* That a gate keeper shall reside at each gate, to open and shut the same for persons passing, in case the

court of the county shall deem such service necessary and require the residence of such gate-keeper for the public convenience.

§ 4. This act shall be in force from its passage.

Report to the Farmers' Assembly on the Law of Enclosures.

By a resolution of the Farmers' Assembly, it was made the duty of the Executive Committee to examine into the subject of the law of enclosures, its bearing on the interests of agriculture in the Eastern and other sections of Virginia, and to suggest such modifications of said law as they might deem proper and expedient. In fulfillment of this duty the Committee would respectfully report:

That they find the following to be the sum and substance of the present General Law of enclosures:

1. Every fence five feet high, which if the fence be on a mound, shall include the mound to the bottom of the ditch, shall be deemed a lawful enclosure as to any stock which cannot creep through the same.

2. If any horses, cattle, hogs, sheep or goats, shall enter into any grounds, enclosed by a lawful fence, the owner of any such animal shall be liable to the owner of such grounds for any injury thereby produced; and for every succeeding trespass by such animal, the owner thereof shall be liable for double damages. And after having given at least five days' previous notice to the owner of said animal, of the fact of two previous trespasses, the owner of such grounds shall be entitled to such animal, if it be found again trespassing on said grounds.

1. The Committee would call attention to the fact that, in principle, this law is essentially the same with that enacted shortly after the settlement of the country, under circumstances the very opposite to those which now for the most part exist. Then the lands to be enclosed and cultivated were mere patches, now they constitute large fields and farms—then the ranges for stock were extensive and valuable, now they are contracted and generally worthless,—then fencing material was abundant, and the best kind, now it is scarce and perishable. If adapted to the wants of the community, and beneficial to the interests of agriculture then, it cannot be so now under such a total change of circumstances as exists in all the eastern portion of our State.

Again, with regard to different sections of Virginia, the same law is made to apply to the East as in the West; where there is little or no fencing timber, as where there is an abundance,—as well where farming or planting, as where grazing is the object and pursuit of our people. If the law is beneficial under the one set of circumstances, it must be the reverse under the other, and ought to be modified to

suit the different pursuits of the people in the different sections of the State.

II. The law will be found to be unjust in operation as well as wrong in principle.

In the case of trespass it throws the whole burthen of proof on the land-holder. He has to prove, before he is entitled to damages, that his fence was a lawful enclosure, and before he is entitled to the *maximum* of damages, he has to prove the identity of the trespassing animal, after a third trespass, and after five days' previous notice has been given to its owner, during which time, and in the previous trespasses, the damage done may amount to a hundred fold the value of said animal. For it is well known that trespasses are generally committed by the most worthless of animals, the valuable being restrained and cared for at home. Now such are the difficulties of proof, and so slight is the prospect of being indemnified by an appeal to the law, that it may be confidently asserted that though cases of trespass by vicious animals, involving great loss to the farmer, are innumerable, yet such a thing as recourse to law to recover damages is scarcely known.

It virtually puts the tiller of the soil who, as such is incapable of doing wrong to any, at the mercy of the stock raiser, whose property is capable, when not restrained, of immense injury to his neighbor. It virtually tells the owner of stock, if your neighbor does not enclose his land with a lawful fence, or if a sudden hurricane prostrates his fences, which he has spared no pains to make lawful, or if an unexpected freshet sweeps it away, then you may enter upon it with your hogs and your cattle, and appropriate his substance to your use. You are fully entitled to as much of his grass and his crops, as you can carry off in the bellies of your animals. Where is the justice of such license? Why not as well say, if a man does not secure his barn, or corn crib, by a good substantial lock, or bolt, or if in the night time, a gust of wind wrenches off the door or a shutter, then his neighbor is fully entitled to help himself to its contents?

3. It has failed to secure the ends which we may reasonably suppose its farmers designed. We may presume the object of the law was on the one hand to encourage stock raising and on the other to protect the tiller of the soil. Has the effect of the law, which has now been in operation two hundred years, been to increase the profits of stock raising in Eastern Virginia? Let the droves of horses, mules, of fatted cattle and hogs which come annually to us from the West answer. Let the salted pork, the salted beef, the candles, the soap, the butter, the cheese, the leather, all products of pasturage, which the Northern steamers land almost daily at our wharves, answer. Or has the effect been to improve the breed of our domestic animals? Is it not notorious on the contrary that under this law, with all unen-

closed lands used as a common, and appropriated as a range of worthless, ill-bred bulls and boars, that strenuous efforts at improvement of our stock by enterprising individuals have over and over again been defeated.

Again, has it succeeded any better in giving protection to the tiller of the soil? With patient submission to the burthen imposed by the law, and at great expense, the farmer may have complied with the requisitions of the statute, he may have defended his crops by the erection of a lawful fence, and yet if his lanes are filled with lean and hungry cattle, led on by some mischievous bull experienced in the art of opening a way to inviting corn-fields, or with herds of rooting and climbing hogs, trespasses must and will occur. In a night the fruit of his labors may be swept away, and he is left poorer in purse, more embittered in his feelings towards his neighbor—and less bound to that country which has failed to secure to him that protection which he has a right to claim at its hands.

4. In its operation it is injurious to the interests of agriculture, because both onerous to individuals, and oppressive to the community.

Suppose a man has bought 100 acres of land, what tax has he to pay before he can appropriate its use to himself? To enclose 100 acres in the ordinary way, supposing the land to lie in the best possible shape, that of a square, will require 1120 pannels of fence, or 14,560 rails, allowing 13 rails to the pannel. To maul this number of rails out of such material as is now left generally in Eastern Virginia, will require the work of one man 145 days. A negro man hires at present for about \$140 per annum, provision and clothes. So that omitting holidays, Sundays, rainy days, and days of sickness, his labor per day is worth 60 cents. To maul the requisite rails then for the outside fence, will cost \$87—and, we may safely put the hauling and building at the same, making the first cost of enclosing \$174. But it has been found in practice that this fence has to be replaced within ten years, at the farthest. Hence the annual cost of repairs will be \$17 40, to pay which requires a capital of \$200. To these amounts we must add the value of the land occupied by the fence and the value of the fence timber. It is a small estimate to say that a width of 15 feet or 5 yards all around the hundred acres will be taken away from cultivation by the fence, making 3 acres out of the 100. The timber, in most of Eastern Virginia, is worth 26 cents per cord standing, and 14,560 rails will make 146 cords. Hence the first cost of material is \$36 50, one tenth of which has to be replaced annually. The average price of land in Virginia, according to the census of 1850, was \$8 per acre, and allowing for subsequent enhancement, we put its present value at \$10. The cost of 100 acres at \$10 will be \$1000. Bringing together the general items of cost of enclosing, we shall have

For first cost of labor for enclosing .	\$174 00
Fund for annual repairs	290 00
3 acres of land occupied by fence . .	30 00
Value of fence material	36 50

Total cost of fencing and keeping enclosed 100 acres . . . \$530 50
an amount more than 50 per cent. of the cost of the fee simple right to the land. So that for every dollar the buyer pays for the land, he pays half as much more to secure it to his own use. As under all such circumstances, the price comes out of the article sold, the buyer pays as much less for the land than its real value as it would cost to enclose it. Thus the price of land is depreciated, and the public treasury as well as the landholder feels the effect.

Let us now see what is the aggregate tax paid by the whole State in fence building. By the census of 1850, there were 26,152,311 acres of land, improved and unimproved in the farms of the State, and 170,181 farmers and planters, making the average size of farms about 154 acres, of which 61 acres are improved. If we consider that the farm never lies in the best shape to be enclosed with the least fencing, that it is often cheaper to take in than leave out a portion of the woodland, that frequently public roads and water streams penetrating the farm cause much additional fencing, and that every farmer requires some interior fencing to restrain his own stock, we may assume that the fencing required in the State is not short of what would be required to enclose at least 100 acres for each proprietor if in the best shape. If so, taking into calculation only the cost of construction, and leaving out of view, at present, the value of the material and of the land occupied by the fences, there is now invested in perishable fences in the State the enormous sum of \$29,611,494. All of which will be lost or destroyed by the effects of time in the space of ten years. To keep up this amount of fencing, requires an annual outlay of \$3,000,000—a sum double the revenue of the State for the year 1856 arising from ordinary sources of taxation, and three or four times greater than such revenue a few years ago.

If to this amount, we add the cost of material \$6,211,600, and the value of land occupied \$5,105,430, both of which are legitimate items, in the cost of fencing we shall find the whole outlay for enclosures in the State rather over \$40,000,000.

The capital thus invested, and the necessary expenditure annually for repairs would cover our State with a net work of rail roads, would educate all our people, and in a few years liquidate the State debt.

But the community and individuals suffer in other respects. It is susceptible of mathematical proof that the smaller the farm, the greater in proportion is the cost of enclosing

it—and when trespass is committed, the greater proportion is the damage sustained. Hence, the farming profits of the smaller proprietor are necessarily less than those of his more wealthy neighbor. His products cannot long continue to sustain the unequal competition, and the consequence is that sooner or later, he is not unfrequently compelled to sell out and seek his fortune in a more favored locality. Thus there is from the action of this law a constant tendency on the part of the large farms to absorb the small ones, and our population, already too thin, is made thinner by the expulsion of a class of farmers who, under the fostering care of a generous legislation, from the very concentration of their efforts, tend to carry the agriculture of a country to the highest state of improvement, to enhance the per acre value of the land and increase the revenue of the State.

Other grievous losses occur to individuals from the operation of this law. It often happens that small landed estates, the property of widows and orphans, whom the law professes to take under its especial care, cannot be sold. At first, when surrounded with a good fence, they are rented out to the advantage of the owners. But as the fences rot down, and each year the cost of repairs becomes greater, the amount of rent becomes smaller, till finally the lands cannot be rented out at all, for they will not justify both the paying of rent and the cost of inclosing. Thus the owners lose not only the small revenue formerly derived from the rent, but the land is given up by the law as a common to the public, and soon its farming value as capital is greatly lessened. Such cases are of frequent occurrence in lower Virginia.

Again, from peculiarity of situation or some other cause, the burthen on individuals is particularly grievous. A stream may run through a farm, requiring a fence on either side, or a water fence, all of which may be suddenly swept away by a fresh, perhaps in mid-summer, in the midst of harvest, when it is impossible for the proprietor to renew the enclosure or to protect his crops against the depredations of the stock of the whole neighbourhood, or a violent hurricane may prostrate his fences and in a single night give entrance to enough lean cattle and famished hogs to ruin his prospects of a crop for that year—or some windy day in March, a fire in a few hours may destroy all the fencing that the labour of the last three months has been able to accomplish—or a public road, or worse still, a cross road may double or quadruple the cost of fencing and increase in the same or even a greater ratio the danger of and liability to trespass. Such cases are not uncommon and no doubt have come under the observation of every reader of this report.

Again, if the law would permit it, the same time and labour which mauls and puts up 100 rails to rot and be lost in a few years, would

convert the same material into a cord of wood worth, with the same hauling, \$2. And the buyer of 100 acres of land instead of paying 50 per cent. of its value to enclose it and keep it enclosed, might with the same labour the first year cut and deliver 146 cords of wood at \$2 per cord, deriving therefrom \$292. Or if instead, the same time and labour were devoted to the improvement of the soil; to draining, liming, manuring, or more thorough tillage, as a certain consequence, the whole country in a few years would assume a different and more improved aspect; the land would increase in product and value; the owner would grow in wealth, and the public treasury would feel the benefit.

5. Of all the causes of neighbourhood bickerings and misunderstandings, this law may confidently be asserted to be the most prolific. A man may have done all that he can do to come up to the requisitions of the law; the time and labour which he ought to have devoted to improving his land and increasing his crops, at great sacrifice, he has devoted to mauling rails and building fences. He may have put up his ten rails and capped them with top log, staked the corners, and on inspection pronounced all good. Trusting to his fence for protection he ploughs and plants. His crops may be almost ready for the sickle. He is just ready to reap the reward of his toil, when some unfortunate night a herd of cattle or swine find their way within his enclosure, and he arise in the morning to look on his loss in dismay. Wherever a night-travelling negro is in the habit of crossing a fence, it is soon to some extent thrown down, inviting the ingress of jumping cattle. Some thin, half-starved hogs cannot be kept out, (such have even been known to gnaw rails in two;) and once in, they lead on the whole herd that are apt to accumulate in lanes. Or worse still, some unprincipled man, either himself or by a small bribe to a negro, not hesitating to help himself to all that the law permits, aids his famishing stock to find their way in. But it matters little by what agency the thing has been brought about. He sees and feels his loss, and that despite every effort on his part to prevent it. It is more than human nature can stand. Were they his own hogs, could they be got out in no other way, he would destroy them. Even if he could furnish the requisite proof, the redress held up to his view by the law is too remote, too uncertain, too inadequate, and altogether too slow for the present pressing evil. He takes the matter in his own hands, and forthwith a feud arises which may be transmitted to the children of the parties concerned. Some may say the above is an extreme case; it may be so, but who will deny that the like is of frequent occurrence?

In making all unenclosed lands a common, this law serves to render indistinct the line which separates the rights of different indi-

viduals,—a line which ought always to stand forth distinctly and boldly. It thus has a demoralizing tendency. It furnishes a plea to one man to make use of that which belongs to another, and it tempts the man, not fortified by principle, to bring about that state of things under which he can enjoy the property of another, without liability for damages for trespass.

Having thus concisely examined the bearing of the law on the interests of agriculture, and pointed out some of its evils, we now turn to the more pleasing task of suggesting such modifications of the law as may afford some relief to a burthened community. And we are pleased to believe that the effort at relief is not now so hopeless as a few years ago. For though such is the *general* law of enclosures, yet in later years the legislature in *particular* cases has not shown itself unwilling to listen to the complaints of our farmers, and to apply the suggested remedy. It has, for example, declared certain water streams in Eastern Virginia, to be lawful enclosures. It has declared the same of mere plantation boundary lines, on the upper waters of the James River, where fences are liable to be washed away by freshes; and more recently in a large district, embracing parts of Nottoway and Lunenburg counties, it has legalized a voluntary agreement, entered into by an association of farmers, by which each farmer has bound himself to restrain his own stock, thus doing away with the necessity of fencing, except one outside ring-fence to enclose the whole district.

These general enactments have all been attended with immense benefit, and the systems instituted under them, have worked well. The selling value of many farms in the tide water region, bordering on creeks and rivers, has doubled in consequence. But much more can yet be done.

Your Committee would recommend—

1. That the law be so modified as to prohibit the running at large of *hogs* in Eastern Virginia. It is now almost universally conceded in this portion of our State, that hogs can be raised and fattened more economically within our enclosures, and in sites, than ranging at large on the barren commons; and such law would enable the construction of fences on a cheaper plan, (the object being merely to restrain cattle,) than those now required for our protection against the depredations of hogs. The benefit which would arise from this change of the law may be illustrated by the case of a New Jersey farmer, who settled in lower Virginia, and who, after buying and stocking his farm, remarked that he would give as much more as he had already expended on his farm, if the law of enclosures here, as in his State, restrained the running at large of hogs.

2. In Prince George county, many farmers feeling the crushing burthen imposed by the fence law, and seeking relief, have formed

voluntary associations, under which they mutually bind themselves to keep up a ring-fence around a number of farms, and each farmer within such enclosure for himself to restrain his own stock, of every description. No less than three such enclosures exist in said county, each embracing some fifteen or sixteen farms, owned and managed by different farmers. They have been in existence for several years, and the system is found to work admirably. The amount of fencing done by each proprietor is small in comparison to what he formerly had to do, when besides fencing in his own, he had to fence out his neighbour's stock. There has been far less difficulty and ill-feeling arising from the trespassing of stock, more labour to devote to draining, marling, manuring, and tillage; and a great saving of fence material, which is every year becoming a matter of pressing importance. Such has been the benefit experienced under this system, still in its infancy and exposed to the natural disadvantages and prejudices which all new schemes have to encounter, the farms within these enclosures, which on account of scarcity of fuel and fence timber, were hardly saleable, have readily gone off at an increased price. Three striking instances have occurred within the last few months. Mr. R., a practical man, bought a farm of 250 acres, at \$18 per acre. On being asked what he would have given for it, if he had his fences to build under the general fence law of the State, replied that he would not have bought it at any price, but he thought its value would be only one-half what he gave for it. Mr. G., recently bought a farm of 180 acres, for which he paid \$3,500. In answer to the same question, he promptly replied, that he would not have bought it, but presumed its value would have been about \$2000. A widow lady, from an adjoining county, lately bought a farm within one of these enclosures, of some 350 acres, for which she paid \$14 per acre. Two good farmers, and practical men, neighbours, were asked what would the land have been worth under the old system, the one replied \$10, the other \$5 per acre. It ought to be stated that the two first farms above referred to, were very deficient in wood, and the third lay in a long narrow strip by the side of a public road, with all its timber at one end. Such is the benefit in this part of the State, to individual owners, and consequently, also, to the treasury of the Commonwealth, arising from this new and uncertain relief from the burthens of the fence-law; uncertain, because dependent altogether on individual action. What might not then be expected, where the law is brought to the aid of the community? We would, therefore, recommend in the second place, that these general enclosures, made by voluntary agreement and association, be sanctioned by legal enactment, so that the present proprietors may be saved from any trouble or annoyance which

might be caused to them by any new settler of different views coming among them. Further, that all similar enclosures should be fostered and encouraged by law, and that on the petition of three-fourths of the land-holders, of any connected space, embracing as many as twelve farms, that the boundary lines of those farms be declared by enactment of the Legislature, to be lawful enclosures, provided an outside ring-fence, embracing the whole, be kept up at the expense of the farms so enclosed.

3. We would recommend with a view to facilitate the formation and extension of such enclosures, that the Legislature direct the county courts, on the application of any twelve neighbouring farmers, to authorize the erection of gates across public roads. There is, we know, a general prejudice against this, on account of inconvenience to travellers. But this objection is every day becoming less and less. Most travelling is now done on railways and by steamboats, and as to neighbourhood movements, it will readily be seen that the larger and further these associated enclosures extend, the fewer gates will have to be encountered. For instance, under the old system, when neighbour A. went with his family to visit neighbour B., his carriage had to encounter both his own and B.'s out-gate. If both lived within such an enclosure as above described, though miles apart, no gate at all has to be encountered. Within one of the enclosures above mentioned in Prince George county, the minister and a very large portion of his congregation go to and return from church every Sunday without having a gate to open. It is only when a person in the public road passes entirely through from one side to the other of the enclosure, that he has an extra trouble from the erection of gates on the roads. This is fully balanced by the convenience of the many who move within the enclosure. And if not, surely this is a very small tax on individual convenience for the public good. Even this would be temporary and yearly diminishing, for as their advantages become better understood, these enclosures would rapidly extend, and within a short period, large districts, embracing, may be, whole counties, would be without both fences and gates to interfere with public travel. When this state of things becomes general, then we would recommend the repeal, in that section of the State, of the present fence-law, and require each owner to restrain his own stock of every kind.

EDMUND RUFFIN, JR.

WILLIAM M. TATE,

RICHARD IRBY,

} Sub-Committee.

Fine Stallions.

The breeder of fine horses will see in this number of the Planter, advertisements by their respective owners—Mr. Dulany, Mr. Smith,

and Dr. Woods—of their very superior stallions; to wit: Scrivington, Kossuth, and Harelock. The two first are well known, and have been seen and admired at our fairs. It were superfluous to say a word in commendation of them. But Dr. Woods' Harelock, a Cleveland, by Scrivington, and only imported last Fall, is not so well known, but he deserves as much praise for his good points as his owner does for his public spirit.

Dr. Woods, we learn, has also imported Napier, not yet arrived however, who is said by some to be the finest Cleveland bay in England, though we suspect that Cleveland Short Legs is a little ahead of him.

We hope the public will not fail to second the efforts of all the owners of these fine animals to improve the breed of our horses. There are mares enough in each locality, now bred to worthless horses, to keep these good animals in full work; and Albemarle, especially, which has tried the Morgans, and wants something a size or two larger, certainly will not permit Dr. Woods to lose money. Those who know him well, know that in the improvement of stock of all kinds, he sets a higher value on reputation than on cash.

For the Southern Planter.

Fencing and Stock Running at Large.

February 17th, 1858.

MR. EDITOR:

Without circumlocution, I will begin *in medias res*, by imitating the old adage, "he who makes two blades of grass to grow, where only one grew before," does more good than the whole race of politicians. I say he who enables the farmer to make only one pannel of fence, where he had to make two, does not only more good than the whole race of politicians, but more than many who have been esteemed benefactors to mankind, for if he has to make only half the fence, the farmer cannot only double the blades of grass, but double the barrels of corn, the bushels of wheat, and also the general productiveness of his farm, and consequently its value, to say nothing of the saving of labour, timber, and vexation of spirit from destroyed crops and the doing so much useless and hard work.

In this county (King William) the five or six field system is generally pursued, but it is getting nearly incompatible with the limited amount of timber, on many of the farms, where they have to fence out not only their own stock, but that of the rest of mankind.

We have been tantalized with many promises

of a substitute for the rail fence, in wire, boards, live fences of various kinds. Many of us thought we had found the great *desideratum* in the osage orange, with its formidable thorns and foliage which animals and insects alike rejected, but you will say, I have been poorly encouraged in my first attempt, when I tell you the fate of mine. It was planted on a bank three feet high, well prepared and protected with cedar brush on the top of the bank. It grew off very well, every plant, but alas! I forgot to put the fence on the outside of the hedge, and the famished stock in the road eat it up, thorns, leaves, roots and all. Nevertheless, I believe in the plant and will try it again, and when I do, I will recollect that infancy requires protection.

But this is not the question. It was the quantity of fencing and not the kind, we are considering. There is a strong party with us who are willing to do our neighbours the justice to keep their stock at home, thereby limiting our fencing, so far as stock is concerned, to our own. The law permitting stock to wander at large, and depredate where they can, is unjust, and the practice, though allowed, is one of questionable honesty.

My object in writing, is to elicit discussion and information on the subject; and as the standard bearer of the farmers of Virginia, I appeal to you to come forward, write yourself, and encourage others to write.

I am always on the lookout for something on this subject, which I have never seen discussed in your paper. Premiums have been offered on several interesting subjects; this one of vital importance to the farmer, has been overlooked. I think it is a subject which may be profitably discussed for a prize; a good practical essay on the subject would do much good.

It takes us nearly all the winter to do our fencing, which time could be much more profitably employed in improving our lands if we had only to enclose our own stock.

Though no radical or reformist, I must say, the law regulating enclosures, is behind the age, it is too much like the Irishman's reciprocity, all on one side. The stock owner is too much favoured to the disadvantage of the land owner. I am democrat enough to think every interest should be equally protected, or not protected at all, and then none would have a right to complain.

Hoping I may excite interest on the subject, and that a better day is coming.

I am yours very respectfully,

L.

For the Planter.

Does Guano "Stimulate the Soil?"

Mr. Editor—I have lately noticed an advertisement of Rhodes' Phosphate of Lime, which the writer says "is not designed to supersede the use of Peruvian

guano, but aid, economise and improve it; the guano by the excess of ammonia, stimulates the soil, but at the same time impoverishes it—acting like strong drink upon the human system; while Rhodes' Superphosphate of Lime furnishes the nutritious materials for vegetable matter, and at the same time enriches the soil, acting like solid food upon the animal body."

"Stimulate the soil" conveys to my mind a singular idea, and I have sought to know what is designed to be conveyed by the expression. This writer says, as "strong drink upon the human system."

Where is the likeness? Had he said these concentrated manures stimulate the *plant*, then there would have been some remote likeness in the *modus operandi* of the two characters of agents. But when he talks of stimulating the soil, there is none. As well may mustard, pepper, and the like condiments, be said to stimulate the food we take with them. True these condiments mixed with food, furnish a stimulating quality to the mass, yet it is the condiments that stimulates the stomach, the vital organ, and not the food taken into it. So Peruvian guano containing, as it does, fertilizing principles, in a highly concentrated state may and doubtless does stimulate the plant or its vital organs, but not the soil in which the plant grows.—

Between the elementary principles of the guano, and those of the soil to which it is applied, there may be carried on both analytical and synthetical operations, by the free play of their elective affinities. But these operations are purely chemical, entirely without the range of vital action.—Stimulation is the result of the action of an agent upon the vital principle, or that property of life, vegetable or animal, in which consist the susceptibility of exhibiting the phenomena of life, when acted upon by the appropriate stimulus. Does guano act merely as a stimulus to the plant, "furnishing no food as strong drink is supposed" to act upon the human system? A man may use strong drink and thereby awaken a preternatural or morbid appetite for food, by gratifying which, he takes on greatly increased flesh. Does this strong drink fatten him by directly furnishing the material, or indirectly by exciting the digestive apparatus to more vigorous action, desiring and assimilating a larger amount of food, while it furnishes

but little nutriment itself? Mainly so—yet this strong drink does not act entirely and alone, as a mere stimulant, for it contains carbon and hydrogen, important elements in the formation of animal fat.—Now, supposing the guano to act in like manner, by stimulating the organism of the plant, contributing no more of nutriment than strong drink does to the nourishment and growth of the animal, how is it that by the application of guano alone, to exhausted lands, originally fertile, a good crop is produced and the land left greatly improved in fertility? To this I should like to have a satisfactory answer. Pure Peruvian guano may contain an excess of ammonia, beyond the present demands of a crop that would consume the other ingredients. If so, what mischief or loss? If the original constitution of the soil be good, this excess will be seized by the soil and held over to meet the next requisition, thus leaving the soil fertilized, not “impoverished.” This strange notion of stimulating the soil has cast dust in the eyes of many and tends to retard the improvement of lands by concentrated manures. Much, it seems to me, would be gained by having this rightly understood. All food stimulates, whether animal or vegetable, but not equally. The difference between the action of food and mere stimulants is this—the mere stimulants act upon the vital susceptibilities or principles of action, exciting to quicken and more vigorous action, for the time only, furnishing nothing for assimilation and appropriation, while food, superadded to its stimulating property, contains elements which being seized and eliminated by the digestive apparatus of the animal or plant, is kept in store for its continued sustentation and growth. The vital powers may droop and its susceptibilities become too feeble to be excited by food alone, and then stimulants come into requisition till the vital energies are sufficiently invigorated to subsist upon food alone. Where then is the great mystery in the action of guano, beyond the action of all other fertilizers? Just this—that in guano, the elements of fertilization are more concentrated. Just the difference that there is between quinine and Peruvian bark, or opium and morphine, concentrative of the active principle, requiring more particularity in regulating the dose.

In all common or domestic manures there is intermixed much material that, at least for the present crop is wholly inert—acting only mechanically, by diluting the more active properties, and rendering the soil more open and porous. So in all food given to animals, there is much that acts only mechanically by dilution, distention, &c. Suppose that by chemical agency the nutritive principles of the various articles of food given to man and beast were extracted from the inert matter with which they are commingled and combined, does any one doubt that the purely nutritious materials would constitute but an exceedingly small proportion of the mass, and is it not manifest that any slight variation in the quantity taken, would be felt greatly more sensibly?

Guano is no production of art, but of nature, controlled by the subtle principle of vitality which controls and modifies all chemical agencies brought within the range of its influence. It may be analyzed as other natural substances, and its prominent elements pretty satisfactorily ascertained, but till it is reproduced by chemical synthesis, I shall claim the privilege of doubting whether all its elements in their exact relative proportions have been ascertained. It is known that the same elements, varying in relative proportions, may form compounds of very different character, and there may be elements in a substance sufficient to greatly modify its character, and yet in so infinitesimal a proportion as to elude the detection of any analytical operation.

Does any one know how stable manure operates; then may he know how guano acts, just making due allowance for the different degree of concentration and the mass of undigested and unassimilated material in the stable manure that must necessarily remain in the land for future operation.

B.

Large Hogs.

Mr. Frank Minor, of Ridgway, in this county, butchered his lot of hogs, a few days since, numbering 104, and the average weight was 243 lb. This average of a farmer's whole lot of ‘killing’ hogs can not be beaten by even Augusta County.—Can it, Mr. *Spectator*?—*Char. Advocate*.

For the Planter.

A Good Gate.

Have a good heart pine log, twelve feet four inches long, and large enough in diameter to make, when sawed, at least nine planks, full one inch thick and five or six inches wide, (to make a planed or dressed gate, have the plank sawed one inch and a quarter thick.) Take two of these planks, saw them into two equal parts in length. When your planks are cut, either dressed or undressed, lay on some level surface two of the six-foot pieces down, eleven feet from out edge to out edge, parallel and even at their ends. Then take one of your long planks and lay it from the lower end of one of these uprights to the upper end of the other, and mark it so that it may be sawed off in a bevel, and just fit between the two as a brace; then saw off seven of the other planks eleven feet long, and lay them horizontally across these two uprights and the one brace fitted exactly between them, the distance apart you may think proper, from about four inches at the bottom of the gate to five, six, seven, as you ascend from the bottom. When these horizontal planks are all adjusted in their proper distances, and the whole tried by a square and found correct, you should lay across these horizontal planks, bars or slats, whatever you may call them, just even with their ends and directly over the two first laid uprights; two more uprights and another brace plank between them, fitted as in the first instance at bottom and top. You will then bore holes through the three at every crossing, large enough to receive a 3-8 rivet,—which rivets may be made of common round iron rods of that size, a good head made to one end, and a little pointed at the other for a bar; these rivets to be about three inches and one quarter in length, which will pass through the three planks about one-fourth of an inch, receive a hoop iron bar, and bear good strong riveting. When these are all drawn through set up the gate, and with one man to hold the pole of an axe on the head of the rivets, another with a hammer can put on the bar previously punched, and beat down the point of the rivet as he chooses. This will require twenty-one rivets,—but I would add two more, one near the end of the braces; making in all twenty-three.

Now for the posts. Get a large white or post oak tree, saw off two posts eleven or twelve feet in length each; leave a butt to each of their larger ends, five feet in length from the butts; have square the upper parts, or flatten one side, and take the bark off the remainder; but for a nice gate, hew neatly and dress.

Dig your post holes for a large gate five feet square and five feet deep. First put in one post, and arrange the hewed face as you wish your gate to set; and in ramming add a mod-

erate quantity of earth at a time, and as you fill in see that your gate post sets with a slope on the side the gate is to rest against, not over five inches back nor less than four inches from a perpendicular at the top; and be sure to keep it in that slope until ramming in the earth will not alter its position,—but be equally certain to keep the post perpendicular in the other direction. When one post is properly arranged and well rammed from the bottom to the top of the hole, put in the other post, and by the eye keep it with the same slope the first has, and by the plumb-line perpendicular in the other direction, until that is also well rammed. The gate may be hung, no doubt, with different kinds of hinges; but I use a cast hinge, made by a pattern I furnished to Mr. Barnes, of Richmond, at his foundry several years ago; and I believe his successor has it at this time. But I find the bolt-holes drilled through two pair I got lately through Dandridge & Hart are larger than necessary. They are heavy, costly, and very strong, and I suppose would last a century or two if painted occasionally. The hooks should be about nine inches long, and for the bottom one an inch and a half broad around the pivots, and three-fourths of an inch thick, let into the post, first by boring with an auger and then trimming with a chisel, and then driving it in. The top hook should be made pretty much the same but with a half inch or three-fourth inch rod welded to the small end, long enough to go through the post, with a screw to receive a strong thick tap resting against the post,—the auger hole being first bored through the post. This fixture is almost absolutely necessary with all heavy gates. Rust after a time will loosen the hook at the top, which at once suffers the weight of the gate to draw it out of the post, and down comes your gate, and all wedging is only a temporary remedy.

A gate thus hung, while being opened, has a tendency to shut until it reaches the central line from the post to which it is hung, a little beyond which, where the gate has a tendency to fall back, a stake or stob should be driven into the ground for the gate to rest against when opened for the passage of carriages of any kind. A gate thus fixed, and a proper latch, will always shut by its own weight; and posts thus embedded and rammed around, will never be seen leaning from the hanging of wagons and carts from careless driving. One of the posts cannot be moved by any common team,—the team will be stopped or the hub slide by it, scraping the post a little. You need not request fox hunters or hasty travelers to be sure to shut your gates. Only request them not to prop them open.

I can hardly describe how I fix the latch, but it may be fixed in different ways. In fixing a latch, always bore the hole for the catch entirely through the post for the shank, otherwise if the catch be ever broken it will be

hard to be gotten out. My latch catches under the notch, so that the weight behind raises the latch to its proper position; though a common latch may be fixed between the horizontal laths and come out between the two uprights, and fall into a notch on the upper side of the catch; though I do not prefer this mode.

If you, Mr. Editor, have a bad out gate, near a road, and wish to try my plan, which I promise you will last you your life-time, as young as you are, I will send you a latch and fixtures for your gate when you are ready for it. But I hardly suppose you will require any improvement on your gates, being at the head of our profession; though it was said of the estimable James M. Garnett, he was one of the best writers on agriculture, but one of the worst practical farmers.

Very respectfully yours,

THOS. B. ANDERSON.

P. S.—The hinges are let into the two uprights nearly or quite the thickness of their jaws, and two bolts with screws and taps pass through each hinge. One side is cast with "Alto Relievo" for the heads of the screws to rest between, so that the bolts may not turn in putting on the taps. You may fix the hinges to any part of the uprights by slipping a piece of the same timber between them, and bore your bolt holes through the uprights and the intervening piece at the same time, which renders that part of the gate pretty much as a solid.

Yours,

February 19th, 1858.

T. B. A.

Our esteemed correspondent supposes our gates all right because we are an Agricultural Editor, but hesitatingly intimates by a reference to the late estimable James M. Garnett, that we *may* instruct by contrast as well as by the pen. Perhaps we do; for how can it be expected that we shall give a general superintendence to everybody else's farm and a special one to our own at the same time? We invite our friend very cordially to come and see for himself when he next visits Richmond; and we will accept his "gate latch and fixtures" with pleasure and gratitude if he will only bring himself along with them. But we give him notice that we farm on "Know Nothing" principles at least in one respect. Whoever comes through *our* gate is as much bound to secrecy as if he had entered the "Culvert." Our preaching and teaching may be as unlike as the public and private life of the Rev. Ike Kallioch are said to be; and a general knowledge of the fact might affect our reputation quite as much as certain disclosures did that distinguished divine's.—Ed. So. PL.

For the Planter.

Shall Apple Trees be Manured, or shall they be Checked, to make them Productive?

In the January No. of the Planter, I ventured to point out what appeared to me to be a conflict between the reasoning and recommendations of two articles in the "Horticultural Department" of that journal.

In reply to my brief communication the "horticulturist" of the Planter, cuts and thrusts at me, in the last number, as remorselessly as he would chisel the "tap-root" of a barren pear or apricot tree. "Tyro answered," however, reminds me of the "reasons" of Gratiano, "two grains of wheat hid in two bushels of chaff,—you shall seek all day ere you find them; and when you have them, they are not worth the search." As it is not my intention to get into a controversy with the learned "Pomologist" of the Planter on this fruitful theme, I shall not undertake to winnow his huge pile of chaff for the small amount of grain that would reward my labour.

I will, however, restate the point in which I conceive the articles referred to come in conflict the one with the other.

In the article on "Apples," nothing is said about manuring trees growing in poor land; nor is any intimation given that rich land would require none. An annual dressing of manure is recommended, without limit or qualification, as a sure remedy for the general barrenness of apple trees every other year; an evil confined to no particular locality or kind of soil, but wide-spread and universal, as common, if not more so, to the most vigorous and luxuriant trees growing on the richest lands, than to those on the poorest; and likewise true of trees on soils of every intermediate degree of fertility. The reason given for this mode of treating apple trees is, that thereby their vigour and luxuriance is increased.

This article, thus insisting that a mode of treating apple trees that induces an increased vigour and luxuriance is all that is necessary to a crop of fruit every year, is succeeded by one on "root-pruning," which set out with the statement that barrenness in fruit trees is often superinduced by vigorous and luxuriant growth; the remedy for which is an application of a "sharp chisel" to the roots. And the wisdom and efficiency of this treatment is enforced by a reference to the general law that anything that retards the growth, impairs the vigour, and diminishes the luxuriance of fruit trees promotes and hastens their fruit-bearing. Frequent transplantings are referred to as an illustration of this truth.

Now, it may be that these diverse modes of reasoning and treatment entirely harmonize and agree, but I confess I am too much of a "simpleton" to perceive it.

I pass over in silence many other things in these horticultural articles that might well be commented upon, and leave the "contributor" to this department of the Planter in the self-complacent mood induced by the utter unconsciousness that there is anything about plants he does not know, "from the cedar tree that is in Lebanon even unto the hyssop that springeth out of the wall," to repeat the lines—

"And on my side it is so well apparell'd,
So clear, so shining, and so evident,
That it will glimmer through a blind man's eye."

I shall be as much rejoiced as any reader of the Planter, if under the teaching of its Horticultural Department every orchard in Virginia is made,

"—like Adonis' gardens,
That one day bloom'd, and fruitful were the next."

Allow me to state a case, and I will trouble the Planter no further. I have an apple tree, a favourite, that like most others of its kind, rarely bears more than each alternate year. It is a healthy and vigorous tree, but not remarkably luxuriant, and gives no evidence of the "prodigious" formation of wood; the soil in which it grows is not quite so rich as the "field of Waterloo," yet it would produce twelve or fifteen barrels of corn to the acre. Now, I would like amazingly to gather a crop of apples from this tree every year, but I am such a "simpleton" I don't know which remedy to make use of. Shall I apply a "heavy dressing of manure" during the winter, or a "sharp chisel to the tap-root?"

February 8th.

TYRO.

For the Southern Planter.

Very Expensive, and, to Me, Useless Manure.

MR. F. G. RUFFIN:

My Dear Sir—I think, in my last communication to your paper, I warned the Virginia farmers to be careful of De Burg's Super Phosphates of lime, which to me had been worse than useless. I then thought perhaps there might possibly have been some defect in my own lands, upon which this manure might not work so well as upon others, but a more recent investigation of this manure and its vendors have well convinced me, that he who dares venture his money upon this, to me, worthless material, ventures at a horrid risk, which but the fewest number of us can afford in times like these. And as I have ever thought, a frank and candid statement of our failures in the various humbuggies of the day, by which we followers of the plough are so thickly beset, was justly due from one to the other, in discharge of this duty, I will now give the Far-

mers, through your paper, my investigation of De Burg's Super Phosphate of lime, as I said in my last communication, that it had entirely failed upon my tobacco and wheat crop, and warned my fellow Farmers to beware how they used it upon lands like my own; determining never to use it again myself. In August of last year, while confined to my house by indisposition, I received from my post office a Circular from the Messrs. J. J. and F. Turner, of Baltimore, lauding De Burg over Peruvian Guano, and all other manures, endorsed by many certificates from various parts of the country. Having nothing else to do, I wrote to these gentlemen, telling them of my efforts and failures with this same De Burg, expressing warmly my regret, as I had fondly hoped to have found in it, that which we Farmers so much needed and desired, to supplant the expensive Guanos, but that I feared to make another rash investment in an article with which I had so completely failed, in two carefully made experiments, and I could not try it again without an indemnity, which I think I proposed somewhat, after this manner, (not having kept a copy,) that they might send to the care of Messrs. Mason & Lewis, merchants of Scottsville, Albemarle county, Va., from one to ten tons of their De Burg for me; that I would take it from there to my farm, and would get my neighbour, Mr. A. P. Giles, (who was from about Baltimore,) whose name was affixed to one of their certificates, to see the preparation of my land, and some of it applied, who should again see my wheat just before harvesting, and that he should then say whether I should pay them for its benefits, if so, how much, or whether they should pay me for its failure, and if so, how much, at the same time giving them many references as to my ability and disposition to pay. This letter, written, I think, on the 25th of August, was shown to my friend and neighbour, Mr. John D. Moon, of Mt. Air, who agreed with me, that I would not hear from the Messrs. Turner again. In due time, I received an answer from the Messrs. Turner, bearing date August the 28th, as follows:

"They wished to inform me that I was mistaken, that I had never used De Burg. We knew so when we read your article a short time since in the American Farmer; the article you got was not De Burg, and that they (we) would not hesitate for one moment to accede to your (my) proposition, but for the fact their supply was not equal to the demand."

Well, confiding, as most of we clod-hoppers are, I thought this might all be just so, but I could not, for the life of me, get rid of the mystery, why, if the demand upon these gentlemen actually was beyond their supply, they should thus cruelly have informed me, a poor, heavily Peruvian Guano gouged farmer, of their having an Excelsior, but ah, not for me! All I could make of this was, it was either so,

or it was not so; if so, it was cruel in them thus to have informed me of so great an agricultural benefit, which was by them reserved for others more fortunate than myself; if it was not so, it was at least a monstrous poor come off. Yet I was fully resolved to ferret out this mystery to its very bottom; and I have done it to my entire satisfaction, and here it is:

On the 26th of last November, being in Richmond, at the Va. Central Railroad meeting, I called upon my friends and Commission Merchants, Messrs. ———, than whom there are not in Richmond, (and of course not in this great world of ours,) two gentlemen of more high sense of honour to be found—of whom I asked where and of whom did you get that *stuff* you sent to me as De Burg. They at once replied of ———

———, a gentleman in whom I could confide, and that one of them would go with me to his office, which one of the firm did, and kindly introduced me to Mr. ———, of whom I asked, have you any of that famous manure called De Burg's Super Phosphate of Lime. He promptly replied no—we do not now keep any such stuff. Of whom did you purchase the article marked De Burg, sold by you to Messrs. ———. He at once promptly said of De Burg himself, to whom we paid our money. Now I was well assured I had gotten the article which Messrs. ———

——— had sent to me. I was just as well satisfied they had sent me the article purchased by them of Mr. ———, and was just as perfectly convinced that Mr. ——— had sent them the very identical, self-same article which he had purchased of Mr. De Burg himself. And yet these Messrs. J. J. & F. Turner write me: "We know you have never used any of De Burg's Super Phosphate of Lime." How is this? Why, does this great manufacturer of manure, Mr. De Burg, send out two articles, one genuine and the other spurious, and both labeled and priced alike! Can this be possible? If so, these Messrs. J. J. & F. Turner must not only know it, but must also know where and to whom they send the two articles, or how could they thus have positively known I had not used the genuine De Burg, and if they know this, and still continue to deal with Mr. De Burg, pray how are we poor Virginia farmers to know but that they too may thus deal out the genuine and the spurious stuff; if so, will they please inform us how we may detect their, or De Burg's spurious stuff; for I must think there are two articles of De Burg's own manufacturing. If so, will Mr. De Burg, or the Messrs. Turner, please be so kind as to inform us of Virginia in what proportion the genuine and the spurious stand to each other. Is it only just a little of the spurious to help out the loss upon the making of a genuine, good article? or the rather, is it merely a little of the good and genuine article to be shipped to a few crack farmers of Maryland and Old

Virginia, merely to secure good, puffing certificates, by which to secure a clear sale of all their spurious stuff to the little farmers of Maryland and us confiding boys of good Old Virginia? I think if the Messrs. Turner will please be so good as to answer frankly the following interrogatory, it may help us a little at guessing at our chances for a good or bad article:

Messrs. J. J. & F. Turner: Sirs—Did you ever receive of Mr. De Burg a cargo of his Super Phosphate of Lime perfectly labeled, which upon inspection proved not to be of the genuine article; if so, did you refuse it; if so, did Mr. De Burg direct you where to ship it; if so, was it not to Richmond, Virginia; if so, did you thus ship it to Richmond; if so, perhaps it was of that same cargo I got my two tons of worthless stuff.

I will just give one more item to show our opinion of De Burg hereabouts. About the 16th of last November, at the sale of the late Andrew Stevenson, in this county, a good deal of De Burg's article, purchased for the last crop of wheat, which was not used, as no wheat was seeded on the estate, was offered at auction by the cryer, upon 8 months time, to as large and intelligent an assembly of farmers as I ever saw at any one sale, and not one cent was bid for it, and all things else went at the tallest prices. If it had been sand it would have been bid for. This told loudly of our having been sadly bitten.

Yours, N.

For the Southern Planter.

Orchard Grass.

As this is near the season for sowing this most useful grass seed, I will furnish you, Mr. Editor, with a few facts relative to its great advantages for cattle, and its yield of seed per acre. In this climate and section of the Valley it is the earliest grass by a month at least; the last to be injured by the winter, and unless pastured too closely in the fall, affording much green food the entire winter.

The quantity of seed obtained per acre from a good and well set field or lot, is often very great. I have repeatedly known fifty bushels per acre saved, and then a respectable crop of hay cut. As to the permanence of the grass, I will mention a statement made to the Farmer's Club of this county, by a member, obtained from my friend, the Rev. Mr. Allemong, of Newtown. His lot has been in this grass thirty-four years, and has averaged during that time more than thirty-five bushels of seed per acre. I see no deterioration now in its stand. A moderate crop of hay has always been cut after securing the seed. It is not equal to Timothy for hay, in weight or nutriment, I think; but I am confident that a lot of ten acres properly seeded, will afford more food for

all kinds of stock in its product of hay and subsequent rapid growth of grass, than any other now known. The hay should be cut early in June. When intended for seed it should remain longer, and after that is secured, should be mowed immediately for hay, or left for fall or winter grazing. It should be sown about the usual time of clover seed on the wheat land, or with the oat crop, which is better. Two bushels per acre should be sown in order to secure a good crop, if it is wished to save the seed. The seed is very low at present, and can be furnished in Baltimore or Strasburg by "Allemon & Son," of Newtown, in this county, at about \$1.20 per bushel.

FREDERICK.

For the Southern Planter.

Blue-Grass Sod for Wheat.

IVANHOE, near Piedmont Station, }
Fauquier county, Feb. 15th, 1858. }

F. G. RUFFIN, Esq.:

Dear Sir—In response to your inquiry, addressed to our Club at its last meeting, as to "the management of blue-grass sod for wheat," I am commissioned to subjoin the following report:

It is the opinion of our farmers that a *blue-grass* sod is not a good preparation of fallow for wheat; but that an *old* sod is perhaps the best chance for a heavy crop of wheat. According to the age of the sod, the English grass, or green-sward, takes possession; and as it increases, so the fitness of the land for wheat increases also. Although the English grass, or green-sward, is the grass that takes possession when our land is first cleared, yet the blue-grass springs spontaneously when land, that has been subjected to cultivation, is allowed to rest. The richer the soil the sooner the blue-grass gives ground to the green-sward; so that it cannot be stated at what age the sod is in the best state for wheat, as the character of the grass changes, more or less, according to the fertility of the land. Our farmers, pursuing the mixed agricultural system of grazing and farming, know so well that the age of sod is important too, in the more certain "*crop of beef*," that they are seldom induced to plough up an old sod. A blue-grass, or *young* sod as it is called, *i. e.*, one from one to five or six years, is esteemed the worst preparation for wheat; for the reason that the green-sward has not taken sufficient possession, and the turf not being sufficiently close, the furrow of the plough will sometimes break, and the blue-grass will inevitably take root and grow from its cultivation in those places imperfectly turned; and if the Summer is a wet one when the land is ploughed, the blue-grass, however well the land may be turned, is almost certain to choke out the wheat. An old sod, on the other hand, when the plough is put into it, furnishes an

unbroken furrow from one corner of a land to another, and if a stone should prevent the perfect subversion of the turf, which the Loudoun bar-share accomplishes with more certainty than any other plough we use, the green-sward has not that vitality which the blue-grass has, and the crop of wheat is not endangered by it. Indeed, as you no doubt have observed, the green-sward is very easily destroyed by good ploughing.

Such has been the uncertainty of the wheat crop for the last five or six years, from the ravages of the joint-worm and other insects, that our farmers prefer, when they break up an old sod, to put it in *corn* first, which up to this time has been a very certain crop; then in corn land wheat, which being after an old sod, is esteemed almost as good a chance for wheat as a common clover-fallow; then, after it has been in clover one or two years, as there may be more or less blue-grass with the clover, they *fallow* it for wheat; the effect of the old sod still showing itself in all these crops, especially in the clover-fallow; so that the old sod is esteemed the means of furnishing a clover-fallow of the best kind; as well as being of itself perhaps the best chance for a heavy crop of wheat. Last year, '57, the best crop of wheat, by far, in our neighbourhood, was on an old sod; and but for the uncertainty of wheat for the last few years, from the causes above enumerated, I am persuaded our farmers would have given the cream of our old sods to *wheat* rather than to *cattle*.

Yours respectfully,

F. LEWIS MARSHALL, Committee
of Piedmont Fauquier Agricultural Club.

For the Southern Planter.

Lime as a Fertilizer.

HANOVER, Feb. 17th, 1858.

Editor of the Southern Planter:

DEAR SIR—The last number of your paper reached me in due time, freighted with its usually interesting articles; but the lack of information, on the subject of lime, by your correspondents, is greatly to be regretted, as this is one of the most important as well as permanent fertilizers that comes within the reach of the agriculturist. For it not only roots out hen-grass and broom-straw, but it also roots out ague and fever and other bilious diseases, purifies the atmosphere, and gives health, vigor and energy where these life-killing diseases have heretofore prevailed. All the information, then, that can be elicited on this absolutely necessary article both for the improvement of the soil and health of the country, is or should be sought after with all the avidity that hunger seeks for food, or thirst for the cooling brook; and if I held the pen of a ready writer, your columns should never be without something in favor of this Alpha and Omega of all good farming, until every farmer below

the head of tide-water should be made sensible of its importance. It is an article, too, so cheap and so easy of transportation, and can be so readily spread on the land, and such a small quantity works such wonders on the soil, driving out poverty, and causing luxuriant crops to grow where before all was sterility and barrenness, changing the character of the soil, and making stiff land more friable and light, and sandy soils more stiff and tenacious, retaining moisture much longer, and causing heat and frost and rain to fructify and fertilize and improve the earth, until it becomes as fruitful as the lands of the Nile. With all these facts so clearly established by the experience of some of the best farmers among us, is it not wonderful that lime should be so little used, and that guano, which is so costly, should be so popular? Can it be, Mr. Editor, that the one has to be transported over seas and rivers and bays and lakes, before it reaches us, and that the other is of home manufacture and abounds in any portion of the Commonwealth, or is it owing to the want of information on the subject on the part of farmers? Surely, Mr. Editor, to the latter cause must be ascribed this neglect, which information through your columns alone can supply and rectify; and it is greatly to be lamented, that gentlemen farmers of intelligence and leisure, who are capable of writing intelligibly on this subject, the most important of all others, should be so little disposed to impart all the information within their practice and experience to those who need the most rousing articles before they can be made to understand their true interests. Let us strive then, Mr. Editor, to shake off this enormous and onerous tribute to a foreign government—of very doubtful value—and seek by all the means within our reach, to promote the great permanent interests of agriculture by changing the current of these large expenditures, and causing them to flow in a far more profitable direction.

I am, with great respect,

Your friend and obedient servant,
 AGRICOLA.

For the Southern Planter.

Soil Analysis—A Reply to the Article Entitled "Fertilizers for Fruit Trees."

LOUDON COUNTY, Va., 2nd mo. 13, 1858.

F. G. Ruffin.—In the Southern Planter for this month is an article headed "Fertilizers for fruit trees." Whether it is editorial or not, does not appear, no credit is given to other publications. This article gives some very erroneous estimates and calculations, and I propose most respectfully to notice them, together with some of the conclusions the writer has come to. The writer first makes an extract from an article of Marshall P. Wilder in the Patent Office Report. This extract advocates 'special fertili-

zers' for fruit trees, and it is to refute the principle of 'special manures' for crops, that the article was written.

The writer says that, 'fruit trees and all our cultivated plants are composed of precisely the same elements, some fourteen in number, four of which are termed organic and ten inorganic. The former exist in the atmosphere, and may be inhaled by the leaves of the plants; the latter are only obtained from the soil. 'If every one of these ten inorganic elements do not exist in the soil, no plant fit for food can grow on that soil unless the lacking element or elements are supplied in manure. On this point all are agreed! 'To ascertain whether any particular soil is deficient in one or more of the elements of plants, it has been proposed, as Mr. Wilder states, to *analyze the soil*. Such an analysis is unnecessary, for if all plants contain the same elements, and no plant can grow on a soil unless it contains every one of the inorganic elements of plants, it follows that if the soil does produce a single spear of grass, a Canada thistle or a white daisy, it contains every one of the inorganic elements of plants. So that to analyze the soil, for the purpose of ascertaining whether it is destitute of any element of plants, is unnecessary if any plant is growing on the soil. If therefore a soil does not produce so much as a blade of quack grass, and cannot be made to produce a plant of any kind by tillage alone, it may be necessary to analyze it in order to ascertain which of the ten inorganic elements are missing; on any other soil it is certainly useless.'

The writer admits that 'it is true,' that 'the soil may contain enough of every element for the production of one species of plant, and not enough for another species which requires a larger quantity,' and then says, 'but no analysis can determine the point.' If 'no analysis can determine the point' whether there is enough of one element for one plant, and not enough of the same element for another plant, how can an analysis tell whether that element is missing or not, in a soil that will produce no plant. Can an analysis tell no difference in the amount of potash between the virgin soils of Virginia, and those which have become impoverished by the cultivation of tobacco formerly. That plant extracts more potash from the soil in the form of nitrate of potash than perhaps any other plant in cultivation, and is not the reason why fine timber succeeds so well on such soils that it needs very little potash for its growth. The admission that an analysis may be necessary in a soil that will produce no plant, is certainly opposed to the other conclusions of the writer, for the presence of an element can as certainly be detected as its absence.

But the most glaring error of the writer is in his estimates of the weight of the soil. 'For instance,' he says, 'a soil ten inches deep would weigh about ten thousand tons gross per acre.' In Johnson's Encyclopedia, article

Earth, the weight of 'arable soil' is put down at 84.5 pounds per cubic foot. Deduct one-sixth for a soil of ten inches, and multiply by 43560, the number of square feet in an acre, and we have 3,066,624 pounds per acre, less than one seventh of 22,400,000 as asserted by the writer. Such gross error is not calculated to inspire confidence in the other assertions. The writer goes on—a crop of wheat of fifty 'bushels per acre contains 40 pounds of phosphoric acid. This 40 pounds mixed up with 22,400,000 pounds of soil is one part in 560,000.' This last sum should be 76,684. Take this last sum and see whether his other calculations will hold good. In soils such as exist generally in the Piedmont region of Virginia, silex or sand forms often one half of the soil: this is easily removed before analyzing. Instead of the 40 pounds of phosphoric acid being 'one in half a million,' as he asserts it would, it would be one in 76,684: one half of this may be removed as sand. Now 2000 bushels of wheat would be 40 times 40 pounds of sulphuric acid, or after removing one half, one part in, say 2000. Now will this writer say, after his experience in 'determining phosphoric acid,' and his conclusion, that 'the analysis has been properly made,' when duplicate analysis of the same soil agree 'within one ten thousandth part, that he cannot detect one part of phosphoric acid in 2000 parts or 4000 parts.

Now a radical error in his essay is in the apparent supposition that this 40 pounds is all the phosphoric acid in the acre of soil. All fertile soils contain it, but it is not all at one time available for plants. Phosphoric acid, potash, and other elements that exist in small quantity in soils, are liberated by their decomposition, but not as fast as the demands of the farmer require, hence the necessity of their application to the soil. Phosphoric acid has been found to exist in all plants where it has been sought for, but it always exists in combination with potash, soda, magnesia or lime. Hence the reason why many crops seem to be much benefitted by an application of bone dust, the other elements may exist in sufficient quantity, and by adding them still further no benefit can accrue, when by adding that that is deficient, an immediate benefit is visible, and the other elements are brought into use. Phosphoric acid exists in less quantity in soils than almost any other element, and is likely to be soonest exhausted, or at least will be available in smaller quantity than others. This will explain why bones act so beneficially as a manure to some crops, where other elements enter more largely into their composition. In some plants, wheat for instance, phosphoric acid exists as phosphate of magnesia in large proportions, in others as phosphate of lime, soda or potash. Some of these combinations may be found more ready than others, or the other elements may be in less quantity than admits of a ready combination. This may explain

why 'for the growth of turnips a soil requires a much greater quantity of available phosphoric acid than to produce wheat.' It may be that it needs a larger amount of acid to effect the combination found even in the small quantity of turnips than wheat. To come to a correct conclusion, we should know whether all combinations in vegetables, of whatever base, are equally available from equal quantities. Agricultural chemistry has much yet to learn, and we can only become competent scholars by closely observing facts and making our observation on them. To do this correctly, we should try different special manures on soils differently constituted, that is, we should try to raise turnips, for instance, on a soil deficient in potash, while other elements were in good proportion, and see whether potash would not be a special manure for turnips then. Until this is done, it is certainly premature to come to the conclusion that 'potash is not a special manure for turnips,' and so of other crops.

The writer considers that 'as applied to horticultural plants, there are many observed facts that would of themselves throw doubt on the correctness' of the theory of special manures. And he particularly urges the fact of the benefit of bone dust, which contains a large quantity of phosphoric acid and ammonia, and very little potash, as a highly esteemed manure. But let me ask what would be the effect of this manure were there little or no potash in the soil. The effect would certainly be, the plant could not thrive, because it requires a considerable portion of potash in the organization of the plant, and if that is not had, no other element except an alkali could supply its place. If this be so, and I presume it will not be disputed, what becomes of the conclusion of the writer that, 'we are not warranted in concluding that it is the potash which abounds in new soils that peculiarly adapts them to the production of these fruits,' the pear, the grape and the strawberry. What is it then, we would ask? Horticulturists know that wood-earth is the best manure for these fruits, and it has a large share of potash in its composition.

The writer says in relation to the theory of 'special manures,' there is not a single well established fact that sustains the doctrine, and as it has been proved erroneous in the only case in which it has been fairly tried; we have no certainty that it may not be equally untrue in all other cases? Will the writer be willing to have his own essay tried by this rule? Seeing that his calculations are exceedingly erroneous when 'fairly tried,' will he admit that we have no certainty that it may not be equally untrue in all 'other cases.' His reasoning would seem to be at variance with his assertions—he states that if anyone of the inorganic elements of the soil is wanting, 'no plant fit for food can grow on that soil unless the lacking element be supplied;' and it may be supplied in any artificial manure, or in its

chemically pure state? This is what the advocate for special manures insists on. But he says that this cannot be ascertained, and 'is unnecessary if any plant is growing on the soil.' And then directly says, that if a soil does not produce a blade of quack grass, &c., it may be necessary to analyze it in order to ascertain which of these ten inorganic elements are missing.' This is exactly what has been done: soils have been examined by chemists—the missing element has been detected and prescribed for, and the result has been a good crop, where the amount of seed sown would not have been realized before. And yet the writer asserts there are no well established facts that sustain the doctrine.' It would be far more consistent with sound reasoning to conclude that where potash does not seem to be a 'special manure for turnips,' that the soil itself contained enough for the supply, and that where phosphoric acid produced so much benefit, that that was the deficient element. And as that was supplied in the cases mentioned by itself, it gives strong evidence in support of the special manure theory. The writer exultingly says, 'now we know that superphosphate is a special manure for turnips, and is it not probable, from the facts mentioned above, that phosphates and ammonia, rather than potash, are the special manures for the vine.' They assuredly always will be, when they are deficient in the soil, and I will venture the assertion, and that the writer himself will not controvert that they themselves will give no effect when applied to a soil saturated with them, and further, that a soil containing no potash, but every other element, will be benefitted by an application of that element as a special manure.

Seeing then the writer of the essay has made such extremely erroneous calculations, and that the instances which he brings forward to support his positions, will admit of quite a different conclusion from what he draws from them, may I not use his own language in conclusion and ask him, 'to give this whole subject of special manures and soil analysis,' and his essay too, 'a careful re-consideration.'

YARDLY TAYLOR.

For the Southern Planter.

Harrowing Wheat—Very Valuable Information Concerning.

Accomac C. H., VA., Feb. 12th, 1858.

F. G. Ruffin, Esq.:

SIR:—In the Southern Planter for the current month, in connection with the publication of a letter on the subject, you request farmers to experiment on *harrowing wheat*, and report results.

Having already experimented, I hereby report the results.

In 1852, March 10th, I commenced rolling my wheat. I intended, by way of experiment,

to harrow one cut; but after a few ups and downs of the harrow; the operation seemed so destructive that I ordered the harrow to desist, and the roller to go on alone.

The harrow was a triangular one, about 7 feet wide, with 19 teeth 10 inches long of 1½ inches square bar iron running edge foremost, and tracking about 4 inches apart. This, with its weight—(which was, I should say, about 100 pounds) and drawn by two horses, made such havoc with the stools of wheat—tearing the roots up, inverting the stools; &c., that I stopped it.

In a short time, however, I had reason to regret it, for the harrowed wheat seemed to be invested with new life, and took and maintained the lead of that adjoining, as though it had received a good top-dressing. Since that time I have never omitted harrowing—the harrow followed immediately by the roller, to press the roots into the soft beds prepared by the action of the harrow while still moist. This I consider important.

The harrowing is an excellent preparation for seeding clover, furnishing a light, fine bed into which it is pressed by the roller.

The time you suggest as the proper time for harrowing wheat—February, is rather earlier than I would advise. The time, however, must depend on location, &c. I generally begin when I perceive the wheat taking a start, and when all danger of the disturbing action of frost is past.

I will state that the soil on which I first made the experiment in 1852, was a light sandy one. I find it equally beneficial, however, on all soils.

Respectfully,
THOS. R. JOYNES, JR.

Largest Yield of Corn on Record.

A correspondent writing from Vanderburg County, Indiana, informs us that at the State Agricultural Exhibition a Silver Pitcher was awarded for the best *five acres* of corn. The award was made upon the decision of three disinterested men in each town, who examined the corn growing in the fields, and measured one acre of each plot. They then made oath to the yield of the single acre, and of the whole five estimated from the acre actually measured. The award made, under oath, was for 857½ bushels of shelled corn on five acres, or 171½ bushels to the acre.

If this has been excelled at any other time, or in any other place, we shall be glad to hear of it. Till we do we shall put *Vanderburg County, Indiana*, at the head of the corn column—unless we hear of some mistake in the above report.

American Agriculturist.

Horticultural Department.

E. G. EGGEING, Contributor.

Hedges.—Osage Orange.

A hedge, (to adopt the language of the Farmers' Encyclopedia) is a living wall (or fence,) formed of woody plants sown or planted in a line and cut or clipped in such a manner as to form a compact mass of any degree of width or height that may be required, either for the purposes of shelter, separation or defence. A definition sufficiently complete for our purposes.

In this country, owing to the facility with which fencing materials can be procured, hedges have not been very generally adopted; but in the older countries of the world, hedges form a most pleasing and attractive feature of every landscape. Every tourist has observed and described those natural fences in England, France, and Germany, where they are cultivated with much care, and are of the utmost moment to the husbandmen.

In some parts of our own country, particularly in the prairie States of the West, the planting and cultivation of hedges has begun, of late years, to attract much attention; and miles of Osage Orange and other hardy plants have been sown or planted for hedges. In this State, occasionally, a hedge is found, made of cedar, or black hawthorne, but serving more for ornament than any purpose of general utility.

It is a mooted question, into the merits of which we do not propose to enter, whether hedges are economical or otherwise, in localities where timber for fencing is abundant. That a well arranged, well set hedge is, in *the long run*, the cheapest fence which a farmer can have around his farm, is, to our minds, as clear as noonday, although the care and labour necessary to develop a hedge is greater than many are able to afford; and the original expenditure would, perhaps, be greater than would be required to construct an ordinary fence. With this discussion, however, we shall not meddle, as our purpose is, merely to give directions for the planting and cultivation of hedges for the guidance of such as affect them.

Hedges may be divided into two classes, such as are designed for utility, and those that are mainly intended for ornament, and for

either class there are several plants proper and suitable.

And first of the hedge for utility. The chief plants used for these, are cedars and osage orange. Formerly, thorns were highly esteemed, but they have deservedly fallen into general disrepute. They do well in England but are wholly unsuited to our climate.

The cedar hedge is very beautiful, and when the farm lies high, it serves admirably to protect it from cold, chilling winds, which are sometimes prejudicial. It is, however, not well suited for general adoption, because of the difficulty of transplanting the young trees, and of getting a number of a size, to form a hedge of any considerable extent. While there are instances within our knowledge of cedar hedges which turn cattle, and in every way subserve the purposes of a board or rail fence; still we are inclined to recommend the planting of cedar hedges, only for ornamental purposes.

This leaves for the hedge for general utility only the osage orange, concerning which a vast deal has been written and printed, much that was eulogistic, much, abusive, and still the contestants are in the field, and eager for the fray. We do not adopt fully the views of either party to this controversy; but believing that both are right in some things, we shall state the facts within our knowledge, and leave each reader to draw his own conclusions.

One thing this controversy has ascertained beyond all question we think, that the osage orange is better suited for hedges in this country, than any and all other plants which have been offered to the public. Its superiority is seen in that it is a native of the country, the rapidity of its growth, the number and size of the thorns it bears, which makes it an object of terror and dread to all animals; the fact that cattle will not eat the plant at all, and the plant scatters no seed over the farm, or if they chance to become thus scattered, they perish during the winter. These are the chief characteristics of the osage orange, and they are just what is needed for a hedge plant, and they are possessed in so eminent a degree by none other.

It has also been ascertained, as we think, beyond doubt, that a hedge, one which will turn any animal larger than a black snake, can

be formed out of osage orange. Instances of such hedges in Virginia are rare, if indeed such an one can be found, and there may be those who would therefore jump to the conclusion that no such hedge can be found elsewhere. Such a conclusion would be erroneous. At the West, such hedges are found, and we have more than once conversed with a Mississippi planter, formerly a Virginian, who comes to this State each year, and who told us of hedges miles long, and some of which he emphatically averred would turn a black snake. We are indebted to this gentleman for much of our information on this subject, and it was by adhering to instructions given by him that we became convinced of the value of the osage orange as a hedge plant.

The failures in Virginia are attributable to the mismanagement and neglect of those who have attempted the cultivation of osage orange hedges, and not to the insufficiency of the plant to answer the purpose. The farmer sends off to the nursery for a lot of plants, which are sent him, probably before he is ready to plant them, they are thrown down somewhere to await his convenience, then planted often as otherwise in a soil not sufficiently prepared for their reception, small plants and large plants are set out indiscriminately, and of course the experiment proves a failure, and the farmer pronounces the osage orange a cheat and a humbug. Such have been the mass of the experiments in this State, and we submit that they establish only the folly of the experimenters.

In Mississippi, according to the authority we have alluded to before, there are persons who make it a business to raise the osage orange, and plant them out for the planters, they receiving a compensation for the work, and warranting the growth of the hedge, the proprietor of the plantation paying a certain part of the compensation at the time that the hedge is planted, and the balance when it is established beyond all peradventure. This gives the contractor a direct personal interest in the success of the hedge, and insures that the plants will have all proper attention which will sufficiently account for the superior success which has attended experiments with osage orange hedges in the west. If such a system could be introduced into Virginia,

hedges of osage orange would be much more highly appreciated.

In the absence of any such arrangement the next best thing is for each farmer, who desires to have an osage orange hedge, to do that for himself which, in Mississippi, is done by a few persons for all the planters—that is, sow the seed, raise the plants, plant the hedges, and give them such cultivation as they need, and if this be done, success is certain.

The osage orange is propagated chiefly from the seed, which are very like the seed of the orange, are contained in a ball from two to five inches in diameter, and are coated over with a gummy substance, which adheres to them most tenaciously. Good seed cannot at all times be had. Those which are saved in the South and West, and brought here from New Orleans, are oftener than otherwise worthless, owing to the fact, that in order to clean the seeds readily, the persons saving them put the balls into hot water, which, in many cases, utterly destroys the fructifying quality of the seeds. A year or two ago an entire barrel of seed, which we obtained from New Orleans by the kindness of Messrs. Dunlop, Moncure & Co., did not give us a single plant. This danger may be avoided by procuring the seed balls instead of the seed already cleaned, and if the plant should be much cultivated there would soon be an ample supply of Virginia raised seed. If the plant be allowed to grow up into a tree, it will bear seed in six or seven years, and as a tree, it is decidedly handsome as a shade tree.

The seed are to be planted in drills, opened two inches deep, and the drills eighteen inches apart, and the seed to be distributed in the drill about as thick as garden peas are sown. The season for sowing is in the month of February, or it may be sowed in the fall if the seed can be procured. Before sowing, the seed should be rolled in ground plaster, as the plaster which adheres to them will greatly facilitate the process of germination. The best soil for it is a sandy loam, tolerably fertile.

The seed sown in February, if they come up well, will give plants by the end of the year, varying from six inches to two or three feet high, and during the year, the only cultivation required, is to keep them free from grass and weeds. These plants are allowed to remain in the nursery rows during the winter, and the ensu-

ing spring, the plants should all be headed back by cutting down half of their full growth, and then the plants are done with until the next fall. Still however, keep the nursery clean of grass and weeds.

While this process is going on in the nursery, grub the line upon which the hedge is to be planted, so as to clear it entirely of every species of shrub and briar, that the land may be left free to the Osage Orange alone.

The second fall or spring after the seed were sown, the plants are old enough to be transferred from the Nursery to the Hedge Row, and as with all other plants, this is a matter of delicacy upon the proper performance of which, much depends. Plants as nearly of the same size as possible will be taken of course, and it will be well to break the roots as little as possible, and where they are broken or bruised to cut such parts off smoothly. And take up only so many plants as can be planted in a few hours, so that they may be out of the ground for the shortest possible period.

The plants are planted as nearly in a straight line as possible, and about eight inches apart, the ground to be broken up say eighteen inches or two feet wide. There are several modes of planting, one of which is to break the land first and then run a line and go on to open holes eight inches apart, into which the plants are put; but there is another mode which we greatly prefer, and which we will attempt to describe, though it is well nigh impossible to do so, without the aid of a cut. It requires two men, one of whom has a spade and the other the plants and a stick, eight inches long, to measure the distance from plant to plant. The one spades the earth, and after turning over several spadefuls, he reverses the spade, and by simply putting the implement down into the earth, presses the soil either way, making an opening into which the other places the plant, and the next spadeful of earth is thrown against the plant and so covers it in properly, and this is repeated every eight inches, until the entire hedge is planted. The earth may be slightly trod with the foot after the planting is done. This is the speediest process which we know of, and one that we pursue in planting all scions in the nursery. The best time for planting is after the leaves have turned yellow and dropped off.

This planting done, the hedge is left to itself for a year, only having an occasional hoeing, and one year from the time of planting the entire hedge is to be cut down to within one or two inches of the ground. The plants thus treated will produce from six to eight shoots, which grow straight up in a bunch, and which are left untouched during a year. At the end of one year from the date at which the plants were first cut down, the second growth is to be cut down, say to within two feet of the ground, which completes the hedge except a semi-annual clipping, which may be done about the first of January and July. A large pair of box-shears is the best thing to use for, this clipping, and a vast deal can be done at it in a day.

The Osage Orange left to its natural course would grow up to be a large tree, but this process of heading back, joined to the close planting, stunts it into a dwarf, and the branches intermingle and interlace until they form a barrier impenetrable. The process at the same time makes the hedge longer-lived than it would be if formed of natural shrubs, and after a few years, the hedge having exhausted the soil, ceases to grow in great measure, and then remains pretty much stationary.

This is the plan of making hedges with Osage Orange, which we would recommend to all persons, and we venture to state with all confidence, that whoso adopts this advice will not be disappointed. It will be observed that this plan devolves the whole process on the farmer, from sowing the seed to the completion of the hedge, and this we deem of importance to ensure success in the experiment. Of course, where persons are unwilling to take all this trouble, and choose rather to purchase the plants from some individual who raises them for sale, the directions we have given for planting and cultivation are still applicable; and may be followed with benefit.

Such a hedge is not intended for division of the farm into fields, and would not be suitable, because such fences are frequently changed, while these hedges are in the nature of things, permanent, and owe much of their excellence to that attribute. But for road-side fencing and all boundary fences, it is hard to conceive of anything more appropriate and valuable than such a hedge as that we have herein de-

scribed. Whether the trouble and expense of getting such a hedge is too great to justify the attempt in a State like ours, where timber is abundant, it is not for us to say, though we incline to the opinion that in view of the permanence of such enclosures, they would be found profitable. One thing, however, we do state most decidedly, that it is better not to attempt to have a hedge, unless you are willing to encounter the trouble and expense involved in the process described. The deficiency in most hedges we have seen has been that near the ground the spaces were wide enough to admit small animals, and this can only be avoided by heading back the plants in the hedges as herein before advised.

We have said nothing about vacancies in the hedge caused by plants dying, because if the plants are raised on the farm, and then taken up carefully, kept out of the ground but a short time, planted with proper care, and not planted until they are two years old, there will scarcely ever be such a thing as a plant dying. When plants die, it is attributable to the failure to comply with some one of the conditions stated, and very much of the prejudice which has existed against the Osage Orange, is properly due either to the fact that the plants were transplanted too early, were kept out of the ground too long, or else were taken up with so little caution that the roots were injured beyond recuperation. Still if gaps do occur, they can be filled with plants from the nursery, where a few should be left to meet such an emergency. It is, however, little likely to occur.

In all that we have said of the cultivation of the Osage Orange, we have but given the results of experiments which we have heretofore conducted in a small way. We were led to make them by conversations with one who had much experience, and in every instance our experience tallied with what we have herein advised, and we therefore speak very confidently and with every assurance that our views are correct. *Would not a good result issue if the Executive Committee of the State Agricultural Society should offer a premium of, say one hundred dollars, for the best mile of Osage Orange Hedge, the competitors for the premium to furnish a detailed statement of the plan of culture, and the expense of the whole process from first to last? If it did no more it*

might settle definitely the dispute concerning the cost of such enclosures, and if it should establish their cheapness it would be an incalculable benefit to the Agriculturists of the State. This article is already so extended that we shall defer what we have to say concerning ornamental hedges until next month, at which time we will conclude all that we have to say on this subject.

Rhubarb--Its Culture and Uses.

Rhubarb is of several kinds, one of which is a well-known drug, entering largely into the treatment of the sick all over the country. This variety, *rheum palmatum*, is a native of China and Russian Tartary, and grows to the greatest perfection in the Tartarian mountains, though it is cultivated with very considerable success in many parts of Europe.

Of this, however, we do not propose to speak, but of the rhubarb, (*rheum rhaponticum*), which is very generally cultivated in the garden, in England and throughout this country. This is a native of Asia, and was introduced into the London market about the year 1815, and not many years thereafter was introduced into this country. It has rapidly gained in public favour in both countries, and immense quantities are sold annually in the large cities. It is a hardy perennial plant, with long, broad leaves, and large stalks, which are slightly acid and vinous.

Several varieties are cultivated in England, some of which are not known in this country. The English varieties are Bucks, new early Scarlet, Tobolsk, Dalley's Goliath, Dalley's Admiral, Elfort Rhubarb, Giant Rhubarb, Wilmot's, Early Red, Myatt's Victoria, and Australian Rhubarb. The Victoria has been tried in Virginia, but did not thrive well. The American varieties are, Early Red, Early Prince Albert, Giant, Mammoth, Victoria, and Red Giant.

The mode of propagation usually pursued in England, is by seed. This should be sown in September, or October, soon after ripening, as the seed is apt to lie dormant through the year, if sown in the Spring. If the seed be sown in Spring, it should be in February or March, and the earlier the better. The seed should be put in drills, four feet apart each way, and about an inch deep, and the plants not to be removed. They will bear transplanting, but it always checks and retards their growth.

The mode of propagation more generally pursued in this country, is by cuttings, that is, root cuttings. The root is something like the Peonia, and a single root may be cut into several pieces, which are to be planted very much as was prescribed for planting the seed, and at the same distance apart. Whether one method or the other be pursued it is well to put several plants together, to be thereafter thinned out as circumstances may require. The season for putting in the cuttings is about the first of March.

Some care must be observed in the selection of a soil, that it be not such as retains much moisture, which this plant does not much affect. The soil best suited is a light, rich, deep soil, moderately moist, such to instance as a rich sandy loam, such as suits asparagus.

The cultivation is no complicated affair, the main thing being to keep the plants clear of weeds, at every and all seasons. Towards the close of the Summer, thin out your plants so as to have them stand at least four feet apart every way. The leaves decay in Autumn, and they are then to be removed, and the bed in which the plants stand to be gently stirred with a fork, and turning in some well-putrified stable manure. Now, if the plants be young seedlings, in order to protect them from the frost, place over the stools a little soil, and so leave them until the ensuing Spring.

In the Spring the beds may be again dug before the plants make their appearance, and as the stalks when blanched, are much less harsh, and require much less sugar to make them palatable, it may be well to earth the plants a little. This is effected by digging a trench between the rows, and throwing the earth thus dug out upon the plants, to the depth of a foot. Or the same end may be attained by a covering of coal ashes or drift sand. Or the blanching may be secured by placing a flower pot, or small keg over the plants in the Fall, and covering it, say two feet thick, all around with manure. Whichever method be taken, the covering must be taken off so soon as the cutting ceases, to allow the plants to grow freely.

The plants sometimes produce seed in two years, but generally in three, and to get the seed in perfection, set apart plants for the purpose, which are neither to be blanched or gathered from. The seed ripen in September,

or October, and should be gathered as soon as ripe.

With us rhubarb is used almost exclusively for pies or tarts, and for this the stalk only is good, and the large ribs in the leaves, but the former almost wholly. It answers thus admirably, having very much the flavour of gooseberries, and coming into use much earlier in the season. It is very generally esteemed, we believe, not only as an agreeable, but as a wholesome article of diet. Besides, from the tender leaf-stalks a jam or jelly is made, which is pronounced good. This is made by adding to one pound of the leaf-stalks, cut as for tarts, one pound of sugar, and boiling until brought to a proper consistency. Buck's early Scarlet rhubarb, prepared thus, makes a beautiful red jelly, and it can be flavoured with any spices that are preferred. The juice expressed from the leaf-stalks makes, it is said, a capital wine. The rhubarb cut into small pieces and done in sugar, in the usual way, makes, it is said, an excellent preserve.

Continuation of the Garden Calender from Last Month.

JUNE—Is the month emphatically for cleaning the garden of weeds. Some persons rake them off and carry them away, but our practice is different. We always weed the garden when the season is hot and dry, and leave the weeds lying upon the surface, where they serve a two-fold purpose. They preserve the land from the ill effects of the scorching heat of the sun, and then they gradually decay and become manure, thus tending to enrich the soil.

At this season, hoeing is beneficial to all plants, as the stirring of the soil protects the roots of the plants from the severe heat, which would be likely to injure them if the surface soil were allowed to bake to a crust.

The latter part of this month, a few turnips, of the Red Top variety, may be sown. The plant-beds, where the cabbages and celery are standing, ought to be watched carefully, to protect them from the ravages of insects, which are now likely to attack them. The best remedy is tobacco trash, put on in the morning while the dew is on the beds, or when that cannot be had, shell lime or soot will answer.

JULY—This is the month for planting out a full crop of cabbage for winter use. Work the

ground deep and thoroughly, and enrich the land with old, well-rotted manure, if you would have fine, large heads. Prepare the land for Fall Cucumbers and Gherkins, for pickles. Sow a few more turnips and a full crop of Swedish, or Ruta Baga. Plant out Cauliflowers, and the last of this month is the best time to plant out Celery. Collect the seeds saved, dry them in the sun for a few days, rub them out and clean them well, and put them away in bags labelled properly. Put in the bags, along with your peas and beans, considerable quantities of fine tobacco, to preserve them from the ravages of the worms.

AUGUST—This is the month to sow a full crop of Turnips. If Celery was not planted last month, plant it now, and where that was done replant to fill vacancies. Sow Spinach and a few Radishes, and a few Kidney Beans for pickles. Sow Lettuce for Fall use. Thin out the Ruta Bagas, so as to leave them stand five or six inches apart in the row. Earth up the Cucumbers.

SEPTEMBER—Sow Turnips and Kale, for salad, any time after the 15th of the month; also, Early York, Large York, and Flat Dutch Cabbage seed, to be planted out later in the Fall, to mature very early the ensuing Spring or Summer. Commence to earth up your Celery, for which full directions will be found in the Planter for November 1857, at page 695. Sow Lettuce, for early Spring use, of the Brown Dutch variety. Make new Strawberry plantations. See Planter, June 1857, page 374.

OCTOBER—The latter part of this month plant out the Lettuce and Cabbages which are intended for use early next year. In planting these latter, be careful to put them deeper than is usual, so as nearly to hide the bud in the earth. Persons wishing to have cabbage for cole-slaw, may, the latter part of this month, take so many heads as they may wish to reserve for that purpose, and bending the outer leaves over the bud, bury them in the earth, leaving the roots upper-most, and burying the cabbage ten or twelve inches. Ridge the earth over the cabbages so as to turn the water off of them, and put them on a sloping hill-side, or other dry place, when possible. Thus buried they bleach white and become very tender. Late in this month cut down the stalks on the

Asparagus beds, and then proceed to dress them for the winter as directed in our article, in the Planter for October 1857, page 623. In some parts of the State, where the frost sets in early, put away cabbages for winter.

NOVEMBER—Dig up your Carrots, Parsnips, Beets, Salsify, Turnips, Ruta Bagas, Onions, Potatoes, &c., and bury them in trenches, or put them away where they can be readily got at during the winter. If the Cabbage were not put away last month, it should be done this. For some directions on keeping Cabbage through the Winter, see Planter for November 1857, page 641.

DECEMBER—When the weather will permit it to be done, the ground may be trenched and run up in ridges, to make it mellow, and a variety of little jobs may be done in the garden in anticipation of the busier seasons of the year. No specific directions can or need be given.

Pickles for Market.

January 25th, 1858.

MR. EGGELING:

Dear Sir—Thinking you would like to hear how I succeeded with my experiment in putting up pickles for sale in the markets, I will here give you the bill of sale, for a barrel of pickles, by a commission merchant in Richmond.

1 barrel, 17 gals. pickles, 25c per gal.,	\$4 25
CHARGES.	
Cash paid freight and toll,	55c
Dray 13c, storage 17c,	30
Commission,	21
	1 06
Nett proceeds,	\$3 19

If to the above costs you add:
8 gals. vinegar, 25c per gal., \$2 00
Iron hooped cask, 1 00 3 00

It will then leave a clear profit of 19 to be divided between the cost of hauling the pickles six miles to market, and my trouble of gathering and pickling the same.

I hope you will excuse me for writing to you about it at all, but I had nothing else to do in particular; it will cost you nothing, perhaps, but a little trouble in reading it.

Very respectfully yours &c.

REMARKS.—We are much obliged to the writer of the foregoing letter, for this report of the ill success of her experiment at putting up pickles for sale in the market, although it seems to contradict the views which we presented in a former article. These views were based

upon information which we derived from sources which we deemed entirely reliable, and we confess to a feeling of acute disappointment upon first reading our correspondent's letter, so utterly discordant with all that we had learned. Subsequent inquiries satisfied us that our original informants had not misled us, and that our correspondent's ill success is attributable wholly to an unfortunate choice of an agent to make sale of her pickles.

The result of our inquiries is, that at no time during the last three months have good pickles, put up in this State, been worth in this market less than from sixty to seventy-five cents per gallon, a price which could have been obtained at any family grocery and of the landlord of either of the principal hotels of the city; and if of superior quality, a somewhat higher rate might have been obtained. Assuming seventy-five cents as the price which our friend ought to have gotten for her pickles, and her account with the commission merchant would stand thus:

1 barrel, 17 gals. pickles,		\$12 75
Freight and toll,	55c	
Drayage and storage,	30	
Commissions,	63	1 48
Nett proceeds,		\$11 27

An exhibit which looks better for the success of our scheme than that which is set forth in the letter upon which we are commenting.

We have no disposition to speak harshly or unkindly of any human being, but the commission merchant who was entrusted with the sale of that barrel of pickles did not discharge his duty towards his employer, unless indeed the article which was sent to him to sell was of inferior quality. We assume that this was not the case, and so assuming, we cannot hesitate to pronounce the transaction unjust to our correspondent, and think in good conscience that the merchant is her debtor in the sum of the difference between three dollars and eleven dollars twenty-seven cents. That is, the commission merchant owes her the sum of eight dollars and twenty-seven cents, which she ought to demand and he ought to pay.

The price which our correspondent got for her pickles is less than is usually paid for cucumbers and the like, merely preserved in salt water, ready for pickling; and the Northern pickles sell in this market now at from

forty to sixty cents per gallon, and at a much higher rate when put up in jars. These are every way inferior to Virginia pickle, and are worth less in the market, as we are assured by every dealer with whom we have conversed on the subject. From all which it does most clearly appear, that our correspondent has to censure her commission merchant for the failure of her experiment, and not the writer of this article.

How to Treat Peach Trees.

BY THE LATE A. J. DOWNING.

APRIL is the time to "shorten-in" your peach, apricot, and nectarine trees, both for the sake of the fruit they will bear this season and the health and good condition of the trees. I suppose everybody understands the difference between shortening-in and common pruning. If not, I must make a long story short by saying, that shortening-in is nothing more than cutting off the ends of the last year's shoots.

Suppose, for instance, the case of a young peach tree just coming into bearing. The growth of last year consists of shoots, all over the outside of the head, or top of the tree, each shoot from ten to twenty inches long. Well, in the case of such a tree, I should shorten-in every shoot one-half—that is, I would cut off five inches of the end if the shoot is ten inches long, or ten inches if it is twice that length. If the tree has made but a moderate growth, then I would take off only a third; or the same if there is but a scanty store of blossom-buds. But if the tree is strong and healthy, and shows an abundance of blossom-buds, then half the length of the last year's shoot is not too much.* The fruit will be larger, you will have as many bushels, and the flavor will be much richer; and what is of great consequence, the constitution of the tree will not be impaired by overbearing.

In the case of large, or old peach trees—especially if they have been neglected, or badly pruned—something must be done that will bring them within bounds again, and restore them to good condition. This, as I have satisfied myself, may be done by "heading-in," which is nothing else than cutting back the ends of the principal limbs—say from two to four feet—in order to make the tree throw out a new head of young, healthy bearing wood. Of course, this proceeding loses you the crop of fruit for this year; so, that if that is important, you must take *one side* of the tree this year, leaving the other side to bear, and next year head-in the other side. In this way I have restored old apricot and peach trees that were "given up by the doctors," superannuated

* I mean, of all the strongest shoots. The weak ones may be left two-thirds their whole length.

and worn out in service, to a pretty respectable condition of youth again; good at least for half a dozen years more.

It is the fashion now-a-days, when the chemists and doctors wish to know what is to be done to help a plant or tree, to *examine its ashes*. It is, in truth, not a bad plan, and is evidently founded on the old doctrine that the new grows out of the old; "ashes to ashes and dust to dust." Exactly what the elements of the peach tree ash are I don't know, for I have not been able to find any analysis; but I conclude they are pretty largely *lime* and *potash*, for I have found by repeated trials that *wood-ashes* is the very substance (along with sufficient manure in the soil, mind,) to maintain a healthy, substantial, and productive habit in a peach tree.

Don't be so foolish, (as many persons are, when they are going to give an extraordinary relish of a new-fangled manure to a plant,) don't be so foolish as to content yourself with sprinkling four or five handfuls of ashes around a peach tree and expect its leaves to turn color with a lease of new life. Take half a peck of *leached* ashes to a young tree, or half a bushel to a full grown tree—in that proportion at least; put not a dust of it around the trunk (that is, so far as benefiting the roots go,) but make a calculation with your eye of how far the roots of the tree spread; it may be two feet, it may be six feet every way from the trunk. Then, having satisfied yourself about where the greater part of the *young fibres* are, spread the ashes on the surface of the ground over them, and turn it under about three inches with the three-pronged spud, or a light spade. If such treatment as this don't give you healthy trees, then your stock is radically diseased, and only worth a place on the wood-pile.

That little enemy, the peach-worm, will very likely have established himself in your trees; he is already there to a dead certainty if you are not wide awake to his sapping and mining habits. If, therefore, you have not been over your trees last fall, and got the upper hand of him for the next six months, altogether the way of doing business with this gentleman is to Lynch him on the spot by ferreting him out of his hole, in the neck of the tree, just below the surface of the ground. You can do this good turn for a peach tree in five minutes, by lifting the soil around it two or three inches deep, laying bare the stem just between wind and water, as the old sailors say. If all looks clean and smooth there, very well; replace the soil again. If, on the other hand, you see *gum*, then look out for the enemy. Scratch a moment with your knife where the gum oozes out, and you will get on his trail; cut into the bark till you find him—in the shape of a white grub, three-quarters of an inch long—and when found, "make no note of it," but settle his account as rapidly as you can.

This grub comes from an egg laid in the

bark, in summer, by the winged insect. Unless the creature is wonderfully abundant, it contents itself with looking about for the tender bark at the surface of the ground. On this account it is a good plan to outwit the rascal by heaping up a little cone or pile of wood ashes, tan or sand, say six inches high, around the trunk. The sole object of this is to guard the soft place in the bark at the neck of the tree. On this account you must clean away the pile every fall, so as to let the bark harden again. If you do not, but keep it there winter an summer, you will find that it does no more good than blowing against the wind—for the very plain reason that the bark becomes tender at the top of the pile, instead of the surface of the ground, as before.

Some years ago a good deal was said in favor of pouring boiling water about the neck* of peach trees. It was said to kill the worms and do no harm to the tree. I am an advocate for this practice. I do not consider it, by any means, so thorough a means for ridding the tree of worms as "war to the knife" is, but still, it will in most cases do the job for them most effectually; and many a tree that stands near the kitchen door may be protected in this way by her who holds the kettle for a weapon, as well as by the "regular army" of practical gardeners.

Besides this, I have satisfied myself, by experiment, (though I am sorry I have not yet had time to get up the *theory*,) that a good dose of hot water is a means of bringing-to many a peach tree just about giving up the ghost. It seems to rouse the vital powers; and if there is life enough left, a good scalding at the neck seems to produce a reaction that is at times quite wonderful.

Three years ago I had two trees, a peach and a favorite apricot, that had been failing for a couple of seasons—often thought before that very serviceable trees. They had been rather badly treated by the worm, to be sure, but that had been attended to in time, and the roots appeared to be in a very fair condition. Still, the trees dwindled, looked sickly, and bore little or no fruit. As a desperate remedy, I resolved on a trial of hot water. I removed the soil directly round the neck of the tree, making a basin three inches deep and twenty inches across. Into this I poured twelve gallons of boiling water.

To my great satisfaction the trees, instead of dying, immediately pushed out vigorous shoots, took a healthy appearance, and made a fine growth of wood, and have since borne two crops of delicious fruit. I experimented last year again, with equal success, and now am ready, like old Dr. Sangrado, to prescribe *hot water* in all desperate cases.—*Tenn. Farmer*.

* I mean by the neck the bottom of the trunk, just at the surface of the ground, where the roots start out.

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Ammonia 8 per cent.—Bone Phosphate of Lime, 45 to 50 per cent.

WARRANTED ONE-HALF BEST PERUVIAN.

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The principal problem in agriculture is, how to replace those substances which have been taken from the soil and which cannot be furnished by the atmosphere. If the manure supplies an effect compensation for this loss, the fertility of a field or country decreases, if on the contrary are given to the fields, then fertility increases.

By recent researches into the constituent ingredients of our cultivated fields have led me to conclusion, that of all the elements furnished to plants by the soil, and ministering to their sustenance, the phosphate of lime or the phosphate generally must be regarded the most important."

[Extracts from Liebig's Ag. Chem.]

The superiority the above guano possesses over all concentrated fertilizers, consists in the fact, while it contains sufficient ammonia to insure all the benefits that can be afforded by a larger quantity of that element, it contains 50 per cent. more bone phosphate of lime than any ammoniacal guano as imported. Hence, while it affords an abundance of the phosphates for the growing crop, without exhausting the soil, it leaves deposited in every acre a quantity that cannot fail to contribute materially to its permanent fertility.

The radical defect in Peruvian guano (otherwise the most valuable of all manures) is, that it possesses an excess of stimulant in its too large per centum of ammonia, and an inadequate quantity of phosphates to compensate for the loss sustained by the soil. Hence the opinion that Peruvian guano tends to exhaust land, is sustained by rational conclusions, as well as experience.

In addition to the above advantages, the condition of our guano gives it a pre-eminence over all other fertilizers. It is entirely free from LUMPS, and is reduced to a uniformly FINE DRY POWDER, every particle being in a minute state of division; a result of the utmost importance, which cannot be secured by any means at the command of the consumer. The solvent action of the salts of ammonia upon the minutely divided phosphates, renders them easily soluble, which effect cannot be had, unless the minute particles be in direct contact, as is known to every one familiar with the laws of chemical affinity. To this fact, doubtless, among others, the remarkable results of this guano are attributable.

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